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Faunal Associations of a Collection of Pre-Columbian Gold Figures from Costa Rica . . .	
. . . David Chiszar, John Cox, Mark J. Chamberlain, Larry Cox and Hobart M. Smith	25
Notes on a Newly Established Frog, <i>Eleutherodactylus coqui</i> , in the Hawaiian Islands	Sean McKeown 30
Book Review: <i>A Field Guide to the Life and Times of Roger Conant</i> by Roger Conant	Raymond Novotny 31
Book Review: <i>A Field Guide to the Life and Times of Roger Conant</i> by Roger Conant	Hobart M. Smith 33
HerPET-POURRI	Ellin Beltz 34
Currently Happening Stuff	Gary Kostka 37
Herpetology 1998	40
Unofficial Minutes of the CHS Board Meeting, January 16, 1998	43
Chicago Herpetological Society Statement of Income and Expense	44
Advertisements	45
News and Announcements: 1998 CHS Herpetological Grants Program	47

Cover: Gold frog pendants thought to originate in pre-Columbian Costa Rica.

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Faunal Associations of a Collection of Pre-Columbian Gold Figures from Costa Rica

David Chiszar¹, John Cox², Mark J. Chamberlain², Larry Cox² and Hobart M. Smith³

Abstract

A private and previously unpublished collection of 26 pre-Columbian gold artifacts ostensibly from Costa Rica was examined, focusing particularly on herpetological images. The cultural and artistic significances of crocodilians, turtles, anurans, and snakes for ancient Mesoamericans lead to anthropological interpretations of the artifacts. Measurement of the specific gravities of a sample ($n = 8$) of the pieces verified that gold content varied substantially, as would be expected of pre-Columbian materials in which gold was alloyed with copper. We suggest that herpetologists will have to give increasing attention to cultural roles of herptiles partly because this material is inherently interesting and partly because conservation programs must be informed by traditions and esthetics of the host countries.

Costa Rican prehistory involved several cultural-artistic traditions which can be grouped into two zones, Guanacaste-Nicoya in the northwest, and the rest of the country (central highlands – Atlantic watershed and the southeastern Diquís bordering Panama). The first zone was influenced by Mesoamerican cultures to the north and west whereas the second zone was far more oriented towards Panama and South America, particularly Colombia. This is readily seen in the facts that jade carving, arising about 1000 B.C. in the Mexican Olmec civilization, entered Costa Rica (100 B.C. – 100 A.D.) via the Guanacaste-Nicoya connection, while metallurgical techniques came into southern parts of the country from Colombia and Panama (~500 A.D.). During the sixth century A.D., political events in Mexico together with volcanic eruptions led to serious disjunctions in Mayan commerce and, hence, to relaxation of cultural ties between the Guanacaste-Nicoya zone and its northwestern neighbors (Sheets, 1984). This allowed gold eventually to replace jade as the primary medium for elite artifacts. As this occurred, it is probable that Costa Rican goldsmithing evolved as did counterparts in Colombia and other South American cultures, proceeding through three overlapping stages: (1) cold-hammering of native gold found as dust or nuggets, (2) melting and open-mold casting, especially of copper, and (3) alloying gold and copper, creating tumbaga or guanin, and use of lost-wax casting. Gilding, plating and soldering were other attainments of stage three. Entrance of gold-working technology into Guanacaste-Nicoya is supported not only by the presence of gold figures but also by the discovery of a clay mold in the zone, indicating that metallurgical work was done locally (Lange and Accola, 1979).

Accordingly, we can be certain that gold-working skills were well established in Costa Rica, particularly in the Diquís area, well before 1000 A.D., and that the skills had spread through the various cultural zones long before the arrival of the Spaniards. Indeed, the name Costa Rica (= rich coast) was given to the area when Columbus and his crew saw local chiefs wearing gold objects. As the Spaniards were uniquely interested in precious metals, they concentrated on Costa Rica to the extent of collecting vast quantities of gold artifacts (“non-

Christian devils”) which were usually melted into ingots prior to shipment to Spain. It is a sad comment upon the sixteenth century that of the tons of artifacts looted from the New World by Spain, none remained intact for study by ethnographers and anthropologists of the nineteenth and twentieth centuries.

Materials now present in the Museo de America, Madrid, were sent as gifts from Bolivia, Peru and Colombia, on the occasion of the quadricentennial of Columbus' voyage (Kelemen, 1969). On the other hand, it is a wonderful comment on the productivity of ancient goldsmiths that significant quantities of beautiful work remained after the plundering of the conquistadors.

Perhaps, too, a compliment should be given to the ingenuity some native peoples exhibited in hiding their wealth from the Spaniards, but much that escaped the Spaniards consisted of earlier funerary objects that had long been buried in cemeteries inaccessible to the conquistadors. In any case, pre-Columbian gold figures exist and continue even today to be discovered, providing new opportunities for appreciation and study.

Thus, it was with much excitement that we approached the examination of a collection of 26 gold artifacts ostensibly from Costa Rica but with no data that could unequivocally establish provenience. The objects are in the care of two of the authors (MJC and LC) and can be viewed by appointment (see end note 1).

Frog pendants are the most common elements in the collection, an important fact for two reasons. First, gold frogs are common from Costa Rica, strongly suggesting that our objects came from that country. Second, the frogs date the material as arising later than 500 A.D. because prior to this time toads were more frequently used as symbolic figures, with the parotoid glands being emphasized (Snarskis, 1985). It is easy to distinguish toad and frog figures by looking for the presence or absence of these glands just behind the eyes. All of our anuran pendants are unquestionably frogs as they lack any trace of parotoid glands. While frogs are used as symbols of fertility in many parts of the world, this is only one part of the meaning of the image in Costa Rica. Anthropological study of the Bribri people of southern Costa Rica (Bozzoli, 1975) has revealed several relevant points that may have been pervasive aspects of

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Figure 1. Frog pendants illustrating false filigree streamers and scrolls in the top three pieces. All pieces show the spayed feet that were characteristic of ancient tumbaga frogs from Costa Rica and Panama. The frogs range from 5 to 25 g and from 2.5×2 cm to 5.8×4.3 cm.

the world views and belief systems of all Mesoamerican peoples. For example, the Bribri possessed a strong sense of hierarchical order, dichotomizing spiritual forces into “an above and below,” with males and females classified into these respective levels. Frogs were associated with women based on their possession of the procreative principle, and they shared the “below” with other creative forces such as water and snakes. These formidable elements needed to be controlled by the inhabitants of “the above,” and perhaps frog pendants worn by men represented an attempt to honor and control procreative forces. In addition, frogs performed an important service for people by sitting upon graves of the dead, preventing them from rising and interfering with the affairs of the living. Thus frogs were important for multiple reasons, and their use as jewelry by living persons could reflect several concerns. Their use as funerary objects, however, was most likely associated with the last function, a ritualized way of providing a frog to sit upon the dead, just in case real frogs were unavailable for this purpose. Without doubt, this is a fairly straightforward example of the upperworld controlling the lowerworld, arguing that frogs were potent symbols. The conquistadors came to understand the funerary role of gold objects and became grave rob-



Figure 2. Two “rattle dancers” (maraqueros) showing headdresses as well as hand-held rattles. The two figures are small, 6.7 and 8.0 g, respectively; both are 3×3 cm.

bers (huaqueros) in their lust for precious metals, and by removing gold anurans, angry spirits of the dead were said to be released to aid the Spaniards in destroying the culture and people they were plundering.

Maraqueros or “rattle players” are human figures holding round-ended cylinders in both hands. Long streamers, called false filigree, arise behind the head and sweep over the shoulders and down along the arms, ending near the hands. In some cases, the streamers terminate near the elbows. An interesting variation on the maraquero theme consists of musicians that hold and play instruments such as drums and flutes. Another variation contains a strand of wirelike gold extending from head to hand or from hand to hand going either around the neck or down to the feet like a jump rope. In some cases, the hand-held piece is tipped by an ovoid head with eye spots. These versions are interpreted as snake dancers. In our figure, each hand holds a strand tipped by a snake head, so the overall image is of a two-headed snake. Such figures likely reflect an ancient, ritualized dance that entered Costa Rica from the Maya in Guatemala and southern Mexico. Even today a snake dance (La Danza de la Culebra) occurs in Santa Cruz del Quiché, Guatemala, and probably elsewhere as well (Peterson, 1990). Men dressed as women handle live snakes in a display of phallic sexuality combined with male control over the female lowerworld. In addition, the controlling males experience increased social and spiritual power as a consequence of the dance. Hence, fertility and dominance are simultaneously enhanced among the males by demonstrating their power over the snakes as representatives of the female-creative world, thereby reaffirming the hierarchical order that forms one of the traditional bases of the culture.

Crocodilians and turtles were important components of Mesoamerican creation myths, with the dorsal surfaces of these animals providing the first land, hence, the first place that could be inhabited by people or other terrestrial creatures. In



Figure 3. Another maraquero, this one much larger than the ones in Figure 2. Also, this one is an anthropomorphic bat. 171 g; 11×11 cm.



Figure 4. A musician tapping a drum with his right hand. The object in the musician's mouth is sometimes interpreted as a flute, but it clearly terminates in a snake's head, held by the musician's left hand. 145 g; 13 × 12 cm.

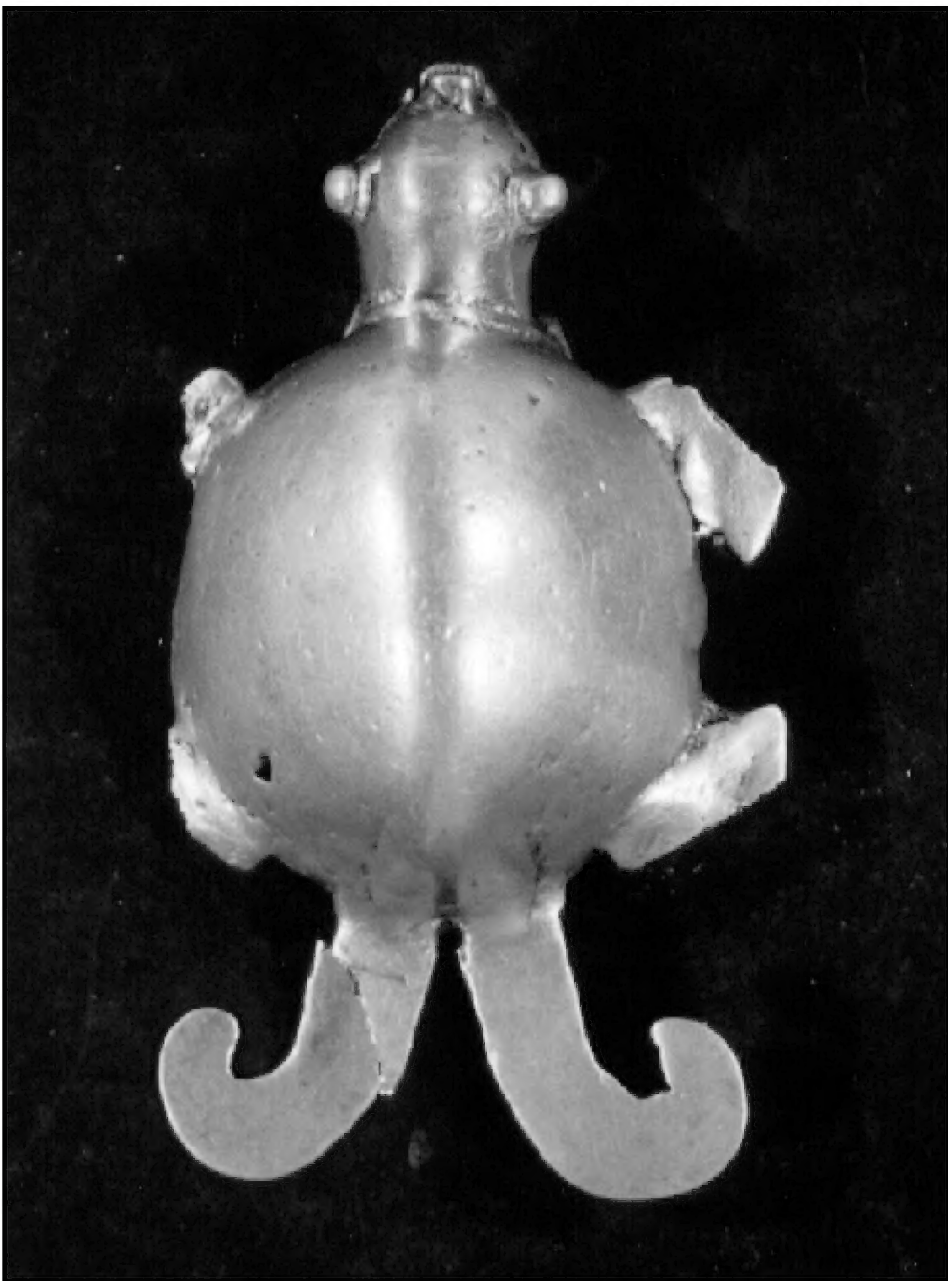


Figure 6. A turtle figure showing the characteristic bifurcated tail. Occasional figures are known that show the double tail serving as a pair of legs such that the figure causes one to think of teenage mutant ninja turtles. 109 g; 10 × 6 cm.



Figure 5. A bat holding a two-headed snake. 92 g; 9.5 × 8 cm.



Figure 7. Birds of prey, including an anthropomorphic bird of prey holding a snake in each hand (upper right). These pendants range from 2.9 to 45 g and from 2.7 × 2.6 cm to 8.3 × 9.1 cm.

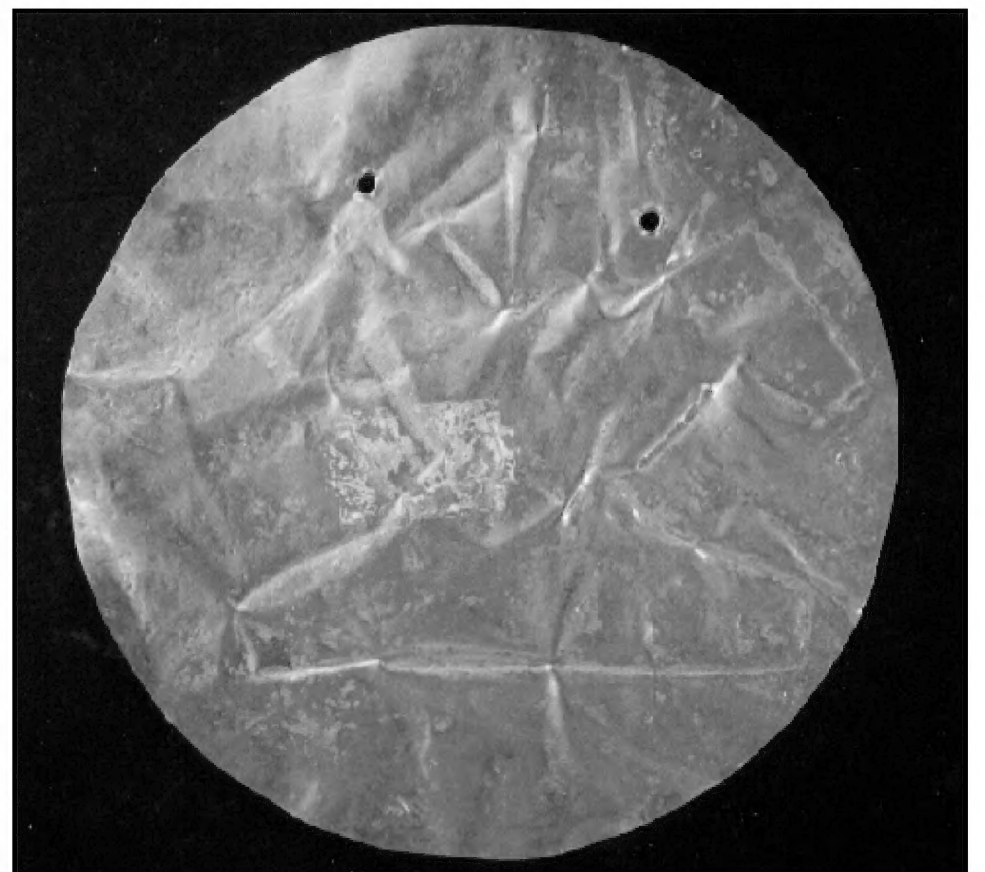


Figure 8. A round pectoral disc. Two holes at the top served to fasten the disc either to garments or to a cord worn around the neck. An outline of an eagle is visible in the disc. 28.1 g; diameter = 14.1 cm.

the vertical world view of ancient Mesoamericans, “here” is the central level in between the upperworld and the lowerworld, so that crocodilians and turtles gave rise to “here.” Therefore, it is not surprising that both taxa were frequent objects of artistic representation and experimentation, sometimes giving rise to remarkable combinations. For example, Olmec dragons unite features of harpy eagles, jaguars, and crocodilians. Turtle-human chimeras are known in Mesoamerican art, probably reflecting human contact with and control over the fecundity spirits associated with the watery worlds of most turtles. It seems likely that reptiles and amphibians became tightly associated with fecundity not only because of the prolificacy of some species but because of the fact that most species are closely connected with water. Agricultural peoples pay sharp attention to rain and water as well as to their correlates. Because various species are correlated with water, these species came to symbolize water and important biological consequences of water (e.g., especially plant growth). Through a common misinterpretation of correlations, manipulation of the symbols was taken as having the power to manipulate the referent. Thus, herptiles became devices through which human forces could be propagated to the creative spirits in the lowerworld.

Diurnal birds of prey, particularly eagles, were closely associated with the sun and other celestial objects in the cultural imagery of Mesoamerica. Thus, eagles, hawks, falcons and vultures were representatives of the upperworld, and in some images these birds were shown capturing creatures of the lowerworld, especially snakes, as an indication of the upperworld's control over the lowerworld. The most famous of these images is the one that has formed the national emblem of Mexico since it became independent of Spain in 1821.

Wearing a golden eagle was clearly a statement of affiliation with the upperworld. Hence, eagle pendants were common throughout Mesoamerica. Eagle images also occurred on pectoral discs, which frequently were simple round (five- to

six-inch diameter) flat plates with borders of dots and sometimes designs of variable complexity in the center. A disc in the present collection has the outline of an eagle hammered into its center.

Pectoral discs or breastplates were worn over the chest, attached to garments or to a neckband. Seen from a distance on a bright day, pectoral discs certainly would have reflected sunlight, not unlike the reflections that arise from mirrors. This point is significant because Columbus in 1502 sailed along the coast of Central America from Honduras to Panama, trading with Indians for “mirrors” of gold which were suspended over their chests from bands around their necks (Colón, 1959). It is probable that these “mirrors” were pectoral discs of the sort shown here. In fact, episodes of exactly this sort gave rise to the name Costa Rica.

Realistic representations of animal forms were common among all of the peoples between Yucatán and Colombia. Hence, some scholars recognize an International Style, referring to this entire stretch of land, when discussing the provenience of cast objects containing naturalistic images, especially when independent data on the origin of the materials were unavailable. Almost all pieces in the present collection could be classified as representing the International Style. Also, the vertical view of upperworld, earth (“here”) and lowerworld was common among Mesoamericans, such that animal metaphors for these domains were also similar in various peoples from southern Mexico to northern South America (see end note 2). For example, bats (*murcielagos*) were ominous symbols of the lowerworld, but in addition to being able to bring death, bats were also associated with sexual potency and fecundity. Likely the latter associations arose because of the vast numbers of bats that would issue from caves at night, a spectacular sight that unquestionably reflects the procreation principle of the



Figure 9. A rectangular pectoral disc bearing a face and a margin of dots. Such discs as this one and the previous one are probably the golden “mirrors” mentioned by Columbus in 1502. 23 g; 9.4 × 6.1 cm.



Figure 10. A spectacular headdress adorns this figure. Note the rope passing between the hands and across the belly. It is likely that this rope is the vestige of a two-headed snake. Because the headdress has grown so large, the human figure must support the structure with its hands which, therefore, are no longer free to hold the respective heads of the snake. Since the snake was an important visual element, the goldsmith has left its body even though the two heads have been sacrificed in order to give internal support to the headdress. 128 g; 11 × 11 cm.

lowerworld. Anthropomorphic bats, like anthropomorphic figures in general, join human and animal characteristics, reflecting a sense of kinship with the zoological world convergent with the same reflections in ancient Greek art. Further, anthropomorphic figures represent human control of earthly and lowerworld forces, as was also the case in ancient Greek art.

Headdresses were common on gold human figures, usually fashioned of the false-filigree workmanship. True filigree involves artistic use of fine gold wire, but the ancient Mesoamerican goldsmiths did not achieve most of their filigree-like effects with gold wire. That is, the wirelike elements were not soldered to the figures after their manufacture, they were actually part of the original cast. The term false-filigree is usually applied to this stylistic attribute of Mesoamerican gold work. Headdresses extend the height or width of the wearer, causing that person to loom larger than would be the case without the adornment. Enhancement of a person's self presentation by a headdress would be expected to give rise to cultural selection pressures leading to ever larger items, and this appears to be exactly what happened both with real headdresses and with those associated with gold effigies. One piece in the present collection exhibits a spectacular headdress that more than triples the width of the human figure.

The Spaniards quickly discovered an interesting fact about Mesoamerican gold artifacts, namely that they varied enormously in purity, ranging from nearly pure gold to having virtually no gold at all. Flat plaques, including pectoral discs, were made by hammering pure gold into sheets. Cast figures, however, were made from gold alloyed with copper, and this process led to metallurgical experimentation for the purpose of husbanding gold by using as little of it as possible in order to produce an aesthetically pleasing product. Disappointing to the Spaniards were objects that appeared to be of pure gold but turned out to be of low-grade tumbaga. The goldsmiths had mastered a process called depletion gilding which was routinely applied to low-grade alloys to make them appear otherwise. A

pickling (acid) material was developed that had no effect on gold but would remove copper. When applied to the surface of cast objects of tumbaga, all copper was eaten away leaving a thin layer of gold. So, the figure looked to be of pure gold even though it contained but little. In Mexico this process was based upon a substance called "gold medicine" (Sahagún, 1959), but analogous techniques were in use among goldsmiths from Mexico to Colombia (Scott, 1983 a, b). Therefore, we assessed the gold content of the present collection by measuring the specific gravity of a sample of eight pieces. Tumbaga varies in specific gravity according to the relative amounts of gold and copper (Reed, 1990, p. 612). Using the data in Reed, we derived the following polynomial regression equation: $\% \text{ gold content} = -103.38 + 16.727 (\text{specific gravity}) - 0.321(\text{specific gravity})^2$. Then, using the methods of Martin (1992), we measured the specific gravity of eight pieces selected at random, finding the mean to be 12.38 (standard deviation = 5.38). These values for specific gravity translate into a mean gold content of 47% (standard deviation = 38). This large variation in gold content is consistent with what we know of the products of the ancient Mesoamerican goldsmiths and is inconsistent with the possibility that the pieces are recently made counterfeits (in which case we would expect uniformity in metallic composition and in specific gravity). In any case, most of our pieces appear to be of relatively low-grade tumbaga, far lower than ideal mixture of 82% gold and 18% copper (Bray, 1985; Kubler, 1962). The images, especially the herpetological ones, are congruent with those known for Costa Rica and elsewhere in Mesoamerica. Most important, by studying the collection we gain insight into the role the animals played in the culture of the people who made and used these artifacts. As the field of herpetology enters the new millennium, we predict that teachers will find it increasingly necessary to incorporate anthropological elements into their courses, not only because this information adds a pedagogical sparkle, but also because conservation programs require that we understand both the ecological and cultural roles of the animals that will be the targets of our efforts.

End Notes

1. The pieces reviewed in this article are available for purchase by contacting MJC or LC, C&C Coins & Collectibles, 381 Main Street, Longmont, CO 80501; (303) 774-9661. E-mail: <cccoin@bouldernews.infi.net>.
2. Although we do not want to push the analogy too far, it is certainly possible to see id, ego and superego in the ancient Mesoamerican hierarchy of lowerworld, "here," and upperworld, respectively.

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Notes on a Newly Established Frog, *Eleutherodactylus coqui*, in the Hawaiian Islands

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During July 1994, on a vacation with his wife to the Hawaiian islands, Robert Campbell, a member of the New England Herpetological Society, encountered a small treefrog. The frog's call was heard by Campbell while on the tropically landscaped grounds of the Hyatt Regency Resort Hotel on the island of Maui. Campbell initially mentioned this frog encounter in the October 1994 issue of *Herp Tales*, the publication of the New England Herpetological Society.

Two years later, in 1996, Robert Campbell made a return trip to the Hawaiian Islands and again flew to Maui and visited the Hyatt Regency in Kaanapali for another look. Campbell commented on this visit in the September 1996 issue of *Herp Tales*. He noted that he had heard no fewer than five male frogs calling and was able to observe the silhouette of one of these amphibians through vegetation from below. In talking with the Hyatt Regency night staff, Campbell learned that people working at the hotel were aware of the small treefrog because of its extremely loud, raucous call. One of the night clerks commented that a very recent guest, who had lived in Puerto Rico, had also heard the calls and clearly identified the vocalizations as that of one of the species of coqui which occur in Puerto Rico. Campbell went on to say that because the natural habitat surrounding the hotel was much more xeric, the frog, which appeared to be established at the Hyatt Regency, probably would not spread beyond the hotel grounds (Campbell, 1996).

Coquis are a complex of largely tropical American treefrogs. Many of the Puerto Rican species are variable in color. Their eggs are laid in the soil, skip the tadpole stage and the

offspring emerge later as tiny froglets. Adult males are known for their very distinctive, loud, two-syllable calls.

On 17 February 1997, Gary Kubota, a correspondent for the *Honolulu Star Bulletin* reported the presence of this new treefrog on Maui as well. Kubota went on to say that a Hawaii state wildlife biologist, Fern Duvall, and entomologist Steve Montgomery had heard the frogs at about 4,000 ft elevation, near Makawao. Duvall also stated that a colony existed in Haiku. According to Duvall, in early February 1997 a resident of the Omaopio area of Maui captured one of these coqui frogs which was later turned over to the State Department of Agriculture (Kubota, 1997).

It was this 17 February 1997 *Honolulu Star Bulletin* clipping that was forwarded to me after CHS columnist Ellin Beltz initially alerted me to the *Herp Tales* article. I immediately made a number of phone inquiries to Duvall, Hawaii State Department of Agriculture officials, Plant Quarantine headquarters on Oahu, Duane Meier, supervising herpetologist at the Honolulu Zoo and several members of the Hawaiian Herpetological Society.

While the local herp people were generally unaware of the presence of this frog in the islands, I was able to bring together bits of information from the other sources in order to gain a better overview.

The coqui is now established in small colonies at several locations on Maui up to an elevation of 4,000 ft (where the nighttime temperatures can drop into the 40s F during the winter months).

A short time later, a U.S. Department of Agriculture cooperative extension service agent reported to me that he had heard what sounded like the distinctive calls of these frogs about 10–11 miles west of Hilo on “the Big Island” of Hawaii at about 1500 ft in elevation. I asked him to try to collect specimens for me. He was able to collect one in April 1997 from that location. It was preserved and sent to me. I forwarded the frog to Ron Crombie, one of the amphibian specialists in the Department of Herpetology at the Smithsonian Institute. Crombie confirmed the identification of the frog collected on the Big Island as *Eleutherodactylus coqui* after also listening to a tape I had made of its specific call. The frog was assigned U.S. National Museum (USNM) #515162. It is presumed that the Maui specimens are of the same species, although *Eleutherodactylus* in general are quite variable in color and there are at least two other species that closely resemble *E. coqui*. Still, the presence of more than one species of *Eleutherodactylus* in Hawaii seems unlikely.

Regrettably, *E. coqui* is not a desirable species to become established in the Hawaiian Islands. This author can only hope its introduction was accidental. Dr. Frederick Heim, the State of Hawaii's vertebrate specialist has theorized the frog arrived in a plant (bromeliad) shipment (Kubota, 1997).

E. coqui is quite vocal and has an *extremely* loud, shrill

“CO-QUI”-sounding call which will not endear it to the local Hawaiian residents. This species of anuran also has the capacity to live in the mid to high elevation native forests, unlike most other herps now found in Hawaii. The fear expressed by Hawaiian entomologists is that this highly mobile anuran will feed on the many native insects found in these forests. Whether or not the presence and probable expansion of *E. coqui* will actually affect endemic insect populations is hard to predict. Nevertheless, there is still the perception by Hawaiian biologists that it will. Such opinions do not make it any easier in the Aloha State for the more benign existing herpetofauna and for local law-abiding herpetoculturists who are already heavily restricted on what they can keep. Negative propaganda about herps is at an all-time fever pitch in the islands, based on the tremendous concern throughout Hawaii that the brown tree snake (*Boiga irregularis*), which has devastated Guam's wildlife, will reach Hawaii with similar results. Since there are frequent military flights and much container freight is moved between Guam and Hawaii, this specific concern is quite legitimate.

Unfortunately, there appears to be little that can be done about removing *E. coqui* from Maui and the Big Island at this time as it is so elusive, lacks a tadpole stage, and its population is starting to spread rapidly.

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**Book Review: *A Field Guide to the Life and Times of Roger Conant* by Roger Conant
 Including photographs by Isabelle Hunt Conant. Sponsored by the Toledo Zoo.
 xix + 498 pages. 1997. SELVA, Canyonlands Publishing Group L.C. ISBN 0-9657446-0-4.
 Available from: Canyonlands Publishing Group, P.O. Box 1957, Provo, Utah 84091-1957. \$49.95 + \$5 postage**

**Raymond Novotny
 Ford Nature Center
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 840 Old Furnace Road
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Roger Conant, Director Emeritus of the Philadelphia Zoo and Adjunct Professor of the University of New Mexico is probably the most well-known herpetologist in America. One reason is because nearly 40 years ago he gave us a compact field guide to help us identify and better understand the reptiles and amphibians of the east. After considerable coaxing from his friends and colleagues, he has now given us a field guide to his remarkable life. This guide however, is too big and heavy to carry along with you in the field!

In his introduction, Dr. Conant writes that he long felt that only the vain and self-centered wrote autobiographies. The encouraging comments given to him on his booklet *Herpetology*

in Ohio—Fifty Years Ago convinced him that he should record his life for posterity. He has mined his sharp memory, his correspondence files, and years of daily diaries kept by his late wife Isabelle to produce over 50 chapters and almost 30 shorter essays, anecdotes, and vignettes.

Readers of the Chicago Herpetological Society *Bulletin* have been treated over the past several years to sneak previews of this volume, for three of the chapters were first published here. The book begins with RC's youth in the New Jersey and Philadelphia region—where he lost his father at age 12. Soon after he developed his lifelong passion for herpetology and zoos through his Boy Scout experiences and his first zoo job. He

then chronicles his six years in Toledo, the importance of which should not be underestimated for during this time he received his professional zoo training and took full advantage of his proximity to the center of academic herpetology at the nearby University of Michigan. These experiences led to the *Reptiles of Ohio* project which certainly gave him the confidence and credentials to tackle the Peterson Field Guide years later.

The bulk of Conant's autobiography deals with the nearly 40 years he spent in Philadelphia, beginning as the zoo's Curator of Reptiles, later adding Public Relations Specialist to those duties, and finally serving as its Director. Though much is written about behind-the-scenes activities at the zoo, even more is devoted to his chasing down specimens for the *Field Guide*, and his field research on the water snakes of Mexico which resulted in a work published by the American Museum of Natural History that compares in scholarship to a doctoral dissertation. On a more personal level, in "A Quarter Century of Happiness" he gives us an intimate look at the love story between him and Isabelle and allows us a glimpse of their lives at Hyla Holler, their home in Taunton Lakes, New Jersey, which was named by him for the nearby sounds of the calling Pine Barrens treefrog, *Hyla andersonii*.

Retiring almost a quarter of a century ago, he moved to Albuquerque. After losing Isabelle to cancer, he devoted years to completion of the project that he and Howard Gloyd started in the 1930s, a monograph of the snake genus *Agkistrodon*. In order to examine specimens both in museums and in the field he traveled to Central America and extensively in Asia. (Indeed, if anyone regularly received postcards from Conant during his sojourns they would now have an impressive collection.) He writes of these trips and of his experiences in almost every U.S. state, every state in Mexico, parts of South America and Africa, much of Europe, and other enticing exotic locales including Australia, and New Zealand.

His ancillary essays on both zoos and herpetology ("Then and Now") and global population ("Breed and Greed") are thought-provoking, and his many anecdotes are delightful, but I most enjoyed his vignettes of herpetologists. I was privileged to have met Ross Allen and Archie Carr, but most I know only

as authors of the older books on my shelves. I thought it was both kind and brilliant that RC leaves unnamed Isabelle's previous husband, even though he describes him as a "monster," while later conveying his respect for him as a herpetologist in the vignettes. You can enjoy playing detective as you read.

I once heard that Roger Conant worked hard to make his writing the best it could be and his success will be demonstrated to every reader. Dr. Conant's word choice (e.g., "eleemosynary") sometimes sent me to the dictionary, but that expanded my vocabulary. Black-and-white photographs abound and there is a series of color plates and an attractive dust jacket. Although the back of the dust jacket hints at it, I would have liked a timeline, the historian's quick and easy reference to significant dates, as well an index for more quickly relocating interesting passages, and an appendix noting Dr. Conant's publications and awards as was done for Roger Tory Peterson in his lavish 1994 biographical tribute; however, the pressure of deadlines may have influenced the author and publisher with regard to these elements. In any case, the humble Conant probably would have vetoed immediately any suggestion of an awards section.

With just the *Agkistrodon* monograph and his memoirs, Roger Conant has already written more pages since turning 80 than most of us will ever compose during our lifetimes. Some might balk at paying nearly \$50 for this volume, but if you do the math, this works out to less than a penny per page. With its sturdy construction (hardbound and sewn-in signatures) it might last until the next change of millennium. For the opportunity to live vicariously the 88+ years (so far) of this focused and persevering genius, the price is truly a bargain. I commend the Toledo Zoo for providing the financial assistance to get this book into print and into our hands. Everyone who has owned and used Conant's field guide will want a copy of his memoirs. You'll be entertained and inspired.

While I was at first surprised to read on page 422 Conant's sentiment that now that his life's story is written he can quit and just relax, to my relief he finishes that chapter, "Some Final Thoughts," by saying, "I can't just loaf, I've still too many things to do." I look forward to reading about them.

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Book Review: *A Field Guide to the Life and Times of Roger Conant* by Roger Conant

Including photographs by Isabelle Hunt Conant. Sponsored by the Toledo Zoo.

xix + 498 pages. 1997. SELVA, Canyonlands Publishing Group L.C. ISBN 0-9657446-0-4.

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This is surely one of the most voluminous autobiographies ever written, outdoing even the masterful autobiography by Michener, long famed for his lengthy books. The page size, after all, is small quarto, $8\frac{1}{2} \times 11$ in., and the text is double-columned. A full page runs something over a thousand words, hence one might calculate a total of something over 450,000 words, allowing for as much as 48 pages in all of black-and-white illustrations — actually probably much less.

The first thought many of us have upon learning of the appearance of an autobiography is that there goes another ego-trip. Indeed that thought has no doubt stifled many a personal account that might otherwise have seen the light of day. It certainly delayed this one, for, as confessed by the author, he too shared that view and long scornfully dismissed the thought of writing such an account. Ultimately he relented only because as a talented, skilled and popular speaker and raconteur he had delivered an oral autobiography several times over to listening audiences, much to their delight and their insistence that so much informative experience should not be allowed to disappear unrecorded.

And now that their wishes have been fulfilled, the importance of this memoir exceeds fondest expectation, for it constitutes not just spellbinding personal anecdotes but an invaluable record of three-quarters of a century of herpetological and zoo history: a record not just of his own activity but of the state of affairs in the contexts of herpetology and zoos at that time. It is a classic for all time, not an expression of vanity or egocentrism.

Once embarked upon a perusal of an autobiography, the reader inevitably seeks to answer the question of what kind of a person is this — what makes him tick. We seek an understanding that transcends superficialities that anyone can see — an understanding that for many will remain elusive no matter how intimate the relationship. A writer reveals much of his innate nature not so much by *what* is written but by *how* it is written. I have known and admired Roger for many years, but he remained an enigma, as do most of my friends, and as do most of anyone's associates. To paraphrase The Shadow of old-time radio, "Who knows what motives lurk in the hearts of men?"

No reader can finish this book without full knowledge that here is a man who exudes good will at every turn; for whom empathy transcends personal welfare; who transformed reticence into extrovert enthusiasm; who rose to every chal-

lenge with unexpected skill; and who led concurrently four highly successful lives through a workaholic drive to do the best possible with whatever talents he possessed under the circumstances encountered.

Four concurrent lives? Most of us live a couple concurrently — family and profession. And Roger lived those most skillfully, with a heroic devotion to his wives and their welfare, and a phenomenal dedication to the success of zoos in the web of civilization. But Roger also lived the life of a scientist of high rank, in herpetology, and of a teacher, in education.

Reading this book is itself an education. Many of Roger's accomplishments are made apparent, leading the reader to an appreciation of what can be done with determination. More important in the long haul is the history that it represents, augmented by the inclusion of three unique summaries. Roger devotes four chapters to comparisons of then and now, giving a sobering picture of what lies ahead if the present trajectories are maintained. He also devotes a chapter to brief character sketches of 25 famous herpetologists and another to 16 equally famous zoo personalities, all no longer living. These are invaluable records for all time, not just the present.

The structure of the book is admirably planned not to overwhelm or to become boring in a chronological straitjacket. There are some 93 chapters or sections with rubrics of their own, none numbered, thus providing doses easily assimilated. Although to a certain degree chronological in arrangement, continuity of topic supersedes dates where they differ. As befits a highly experienced and hypercritical proofreader, Conant has seen to it that very few typos or other lapses exist. The work is another example of the insistence upon superb excellence that characterizes every product of this exemplary scholar and humanitarian. The University of Colorado never granted a more deserved Doctor of Science degree than the one awarded to Roger in 1971; indeed, I regard the University as distinctly honored that Roger Conant holds a distinguished degree from there.

The purpose of this review is simply to express my opinion that it is one of the most important milestones ever written in herpetology, in herpetoculture, and in zoo history. No one in those fields, or in conservation, should miss reading it. It is rather expensive, but the reader gets his money's worth. And, if it makes any difference, the reader should know that all proceeds, if any, from the book's sales are plowed back into the Toledo Zoo, which largely financed its publication.

HerPET-POURRI

by Ellin Beltz

A really big thank you! to all the folks who wrote sympathizing with our house-disaster and its ongoing “Home Improvement” nightmare. I always thought I was busy before, but working and having one’s house worked on combined, don’t leave much time for other things—like writing. The other day when I sat down to start to write, my computer kept going “ping” and putting up messages like “out of memory—unable to run Windows.” I had too much stuff on my hard drive, so instead of writing, I started moving files to a zip disk. Several hours later in the process, I found a story that I wrote a couple of years ago. Hope you enjoy it! We’ll return to clippings next month, so please keep sending herp stories with date/publication slug attached to: Ellin Beltz, 1647 N. Clybourn Avenue, Chicago, IL 60614-5507. Letters only to <ebeltz@ripco.com>.

It’s turtles all the way down . . .

Growing up in the heart of New York, on Manhattan Island, I rarely saw any wildlife except for the ubiquitous roaches, rats, mice, pigeons, and drunks. But one day, my friend Daria-Jean Sullivan bought a baby turtle (probably a red-eared slider) at the five-and-dime. She bought a little plastic bowl with a palm tree and she fed the turtle hamburger meat and lettuce. We would take the turtle in our hands and marvel at its aged and knowing features. One day, by accident, I dropped the turtle on a rug. I was mortified, ashamed and embarrassed. I was sure it would die. I confessed to Daria and she wasn’t worried since she’d dropped it too, and it had survived. So we started to let the turtle roam in the apartment while we watched carefully and found that baby turtles are very hardy little creatures capable of climbing draperies and facing down pet cats. It particularly liked to sit on the window sill and hiss at pigeons. It was growing quite nicely, but one day it just died. I was disconsolate; Daria more pragmatic. She bought another turtle but this one had no personality and no appetite and it soon perished.

That summer, we went to camp and were able to watch wild turtles in the small pond near our tents. We also tried to catch frogs and ended up in rather dirty mud and a lot of trouble for not being “team players” and knotting lanyards or whatever “happy camper” the grownups had organized. I don’t recall ever catching any frogs. I always liked just sitting quietly on the edge watching to jumping in the water, anyway. Daria-Jean always insisted in jumping in after them; but that was her way in most everything.

We also visited my family in southern New Jersey often. They lived on a barrier island north of Atlantic City. The only turtles down there were diamondback terrapins, which glided among the grasses and reeds of the inland waterway where we also went fishing for flounder and crabs. I’ll never forget the first terrapin I saw out of the water—it was so huge and cumbersome compared with how gracefully they swam in the brackish waters of “the bay.” My grandfather told me that they used to get sea turtles in the inlet in early winter. He said they were “football-sized,” what I now know to be juvenile turtles, and that they all left right before the bad weather set in. He encouraged me to beachcomb for shells, seaweed and

sargasso and taught me to see the migrations of the ancient horseshoe crabs in the Atlantic by counting the strandings. But no sea turtles, except at the Aquarium at Steel Pier where they looked rather pitiful, swimming round and round in tanks.

I saw my first box turtle on Long Island. I don’t remember why we went out there, but we stopped at a farm stand for something and the man had a box turtle as a pet and said that they lived in his strawberry fields. He showed us a turtle’s burrow next to one of his fenceposts, but my mother wouldn’t let me go exploring out in the field, even though he said it was okay, because she didn’t want me to get dirty. (Did she know me or what?)

An unforgettable early childhood experience is when I saw my first snapping turtle in the bottom of a fisherman’s boat. It had come up on one of his freshwater crab traps and he was taking it home for dinner. He showed me how hard the jaws snapped shut by teasing it with the end of a pole. I was extremely impressed. To this day, I have never touched, nor ever intend to touch, a snapping turtle with a shell longer than six inches. About the same time, we went to Florida and saw one of the famous alligator wrestling shows out along the Tamiami Trail in the Everglades.

Back in the City, Daria-Jean and I went to the American Museum and looked at the herpetological exhibits, dreaming of trips to the Galapagos and Komodo Island. I was so interested in all this stuff that one day my nurse took me to the Bronx Zoo. We were waiting in line for something when a man came up to Bridie and asked if I could pose with their Galapagos Tortoise for a picture. It was later published in the *New York Times* and shows a much younger me wearing a Mickey Mouse hat riding the back of the tortoise. Perhaps it was a prophetic picture for turtles and tortoises have provided several turning points in my life. My reputation as a turtle-ophile probably started from the newspaper picture which I kept pinned up in my room. It’s not every day you get your picture in the *Times*!

Then we moved away from New York and after a bunch of moving around finally ended up in Chicago. The latter had even less wildlife since the downtown was, in the late 1960s, practically deserted. Surrounding the city was a small ring of postwar suburbs, then miles and miles of corn. My grandparents came out to visit us and we took them to all the museums and the Aquarium and one day we drove on North Avenue all the way to the Mississippi River. There was no nature outside Chicago, at least not of the type I recognized from the east coast, just miles and miles of flat land given over to mechanized agriculture. There were no hedgerows, no contour plowing. I remember my grandfather saying that the farmers didn’t remember the Dust Bowl and were going to have it again when the weather changed. We stopped at a restaurant along a river which was built in an old mill. The mill pond was full of ducks and one algae-covered turtle. It looked at me with wise-old eyes, decided I was not to be trusted, and plopped into the millpond.

The next turtle I met changed my life. I had married, had a child, and divorced. I was living in an old building in down-

town Chicago and decided to plant a garden in a tiny patch of bare dirt behind the house. One day, I dug a pond. Knowing nothing of aquaculture, I decided I needed water lilies for this 500-gallon hole and got some bags, a shovel, my daughter, and a large cardboard box into the car and headed for “nature.” In 1985, “nature” was still to be found in Lake County; the huge building boom of the late 1980s had not yet turned every patch of bare dirt into corporate plazas, shopping malls, residential subdivisions or parking lots.

We drove along until we saw a sign for “Lily Lake.” That sounded promising, but when we got to the lake we saw speedboats going around and around in circles (which is all they can do in Illinois’ tiny lakes) and no lilies. A young man on a bicycle said that there had been lilies, but the speedboats had wrecked them and they were no more. However, he described some lilies in a farm ditch some distance ahead; so we drove on. I braked to a sudden stop when I saw a turtle crossing the road. We took the turtle, which immediately baptized us, the car and everything, and plopped it in the cardboard box.

Now, fellow herpers, this was a really stupid thing for me to do. I knew *nothing* about keeping turtles and it was very irresponsible to just drive off with a living being for whom I had no facilities and no clue. But it was done and cannot be changed. At the time, I thought nothing of it, but that I had a turtle for my pond. After all, you can feed them lettuce and hamburger, can’t you?

We did get the lilies, just where the youth had said, and returned to Chicago. The lilies and the turtle were dumped in the pond and I went to the local bait shop and bought a box of nightcrawlers for the turtle. Within a few days, the turtle was hand-feeding. I’d dangle my fingers in the water, and she’d come swimming over, eat her worms and disappear. This went on for all of July and all of August, but I was getting worried about what to do with her over the winter.

One day, I saw a notice in the free paper for turtle races sponsored by the Chicago Herpetological Society to be held at a big, fancy downtown hotel. We went, but Rosie didn’t feel like racing—she just stayed on the bottom of the hotel’s reflecting pool and reflected. I think it was all too much for her. I did get some information on the CHS from Mike Dloogatch and went to their next meeting with my daughter. The speaker was Michael Lannoo (now with the Declining Amphibian Populations Task Force). His topic was “Cannibalistic Morphs of the Tiger Salamander.” My daughter and I really enjoyed the talk and I later asked Dloogatch what I could do to get involved with the group. He invited me to his home for the next “stuff the newsletter” party and board meeting.

It was at that meeting that I met Ken Mierzwa. Our first conversation was about mousetraps and how to catch the wild mice that had invaded my house and were driving me nuts. Eloise and I went to the next few meetings; by January, Ken and I were seeing each other every day. I had started going to Mike Dloogatch’s office to type in parts for the newsletter. In December, I replied to a letter received from a reader—this was the start of my “HerPET-POURRI” column in December, 1986 (although it was titled “HerPet Peeves”). I also started researching captive care of amphibians and reptiles. The CHS had a looseleaf collection of “Care-in-Captivity” pages which everyone said were good but “needed updating.”

Rosie, meanwhile, had disappeared. I had planned to take her inside to a playpool I set up in the living room, but she was nowhere to be found. I muddled the whole pond, dug up half the yard and—to this day—have never seen her again. All I can assume is that she was taken. The local kids swore up and down they’d not seen her walking away, so I had to assume she was carried. I was very sad, but soon I was getting pets of all kinds from other CHS members and other people because they knew I’d take care of them. The playpool had a few too many turtles that winter; in spring, I gave them to people with bigger gardens because I didn’t want another garden turtle if people were going to steal pet turtles out of my yard.

About this time, the newsletter was merged with the *Bulletin* and Mike asked me to summarize newspaper clippings for a regular column in the new, monthly *Bulletin*. I was later appointed editor of new “Care-in-Captivity” pages. After much work with the original care sheet authors, three different CHS members to review for each page and the three really involved veterinarians then active, “Care-in-Captivity” was published in 1989. I have continued to collect revisions, additions and accounts of other species and hope someday to be able to produce a newer version for the Society. Curiously, both the booklet and the bulletin were being desktop published long before there were programs for publishing. What Mike figured out was how to use “command characters” to control our printers, so our documents looked like alphabet soup—but printed beautifully. It was this early experience with computers that would later prove so helpful.

Then I was given the opportunity to attend the first World Congress of Herpetology in Canterbury, England. I had attended Society for the Study of Amphibians and Reptiles meetings and so knew some of the attendees, but I was pleased and privileged to meet some of the most famous herpetologists in the world at the Congress. Many knew of CHS and I was able to encourage some of them to write for our *Bulletin*.

A year later I was contacted by our state’s department of conservation to do a frog survey of the Illinois chorus frog (*Pseudacris streckeri illinoensis*). To be completely honest, they called me because nobody else in the state was dumb enough to say “yes” to the project specifications. So I said “yes” and spent the next month of my life driving around cornfields, at night, in 30-degree weather, with the windows down, in the middle of nowhere, listening to frogs. There were moments of pure terror like when I buried my Buick up to the door handles in a sand road and was later shot at by a paranoid farmer; but all-in-all the experience was very positive and formative.

That fall, I went back to school. I had two years of work to finish an environmental biology degree. I’d been out of school for 17 years and was plunked right down in 300 level biology and science courses. I don’t think I ever worked so hard in my life as I did that first semester. Meanwhile, I started writing for the American Federation of Herpetoculturists’ magazine, the *Vivarium*, as well as continuing to write for CHS. I was elected editor-in-chief of the student newspaper—that early desktop publishing experience was now translated into production on a roomful of Macs and other “all-pro” equipment. Then I received a contract from the state to do a baseline survey for the massasauga rattlesnake (*Sistrurus*

catenatus), a potential endangered species, as well as to continue to the frog work which I did on spring break.

Massasaugas were hot that year. In spring, a conference was held at Toronto Metro Zoo and I submitted a paper I had done on historical massasauga distribution in North America for presentation. Was I ever surprised to find out I was third on their program, behind Keith Corbett and Francis Cook! I was also scared to death. I'd given nature center programs and class presentations, but never something like this. Thank heavens they had a microphone, or I don't think anyone would have heard me more than two feet away.

That fall, I was on a field trip to the Fox River led by Gene McArdle of NEIU. One of the people whose property we visited described seeing a snapping turtle lay eggs on the bank of the Fox earlier that year. She asked Dr. McArdle if he would consider digging up the nest to "see if the babies were all right," even though he had explained to her that some nests overwinter and actually emerge in spring. He suggested that since I was the herpetologist in the bunch, that I should be the one to dig up the nest. I told him that I knew zip about nests except from models I had seen in museums or drawings in books and he told me to start digging. The depression the female had made was still somewhat visible along the edge of the ornamental plantings, so I made a small hole in the turf with a teaspoon and started digging down by hand. After about eight inches, I found the first egg. It was shriveled and at first I feared the worst—that all the babies were dead. I should have known better. These were snapping turtles after all. As I held the first egg up for the other students to see and photograph, the shell split open, and the turtle's head poked out. He slid out of the egg on his yolk sac. We carefully removed all the eggs and had 53 live turtles and 14 dead ones. The dead ones were mostly on the bottom of the nest. The lady wanted to keep some of the babies to show her friends, and the professor suggested that the students should each take one home and feed it over the winter. In spring, we returned to the Fox and compared our turtles, then had an impromptu turtle race as the babies scrambled for the water.

All this herpetological field work had an unexpected effect. While flipping rocks, I became interested in rocks. While studying a sand-dependent frog, I got interested in sand. Finding that massasaugas like a particular type of clayey soil got me interested in learning more about Illinois glacial deposits. One of our long-time CHS members, Ron Humbert, had shown me his rock and mineral cases one time at a board meeting and only a little bit had stuck. I bought some rock books and tried to teach myself, but it was too complicated. So I signed up for a geology class (which would count towards my degree). I got my undergraduate degree, and reentered Northeastern in the fall as a graduate student in Earth Science.

That winter, my husband and I went to the island of St. Lucia which had rainforest for him, and an active volcano for me. Although we did see the endangered St. Lucia parrot in the wild, the herps of the rainforest eluded us. Probably had something to do with the line of loud tourists to which we were attached. Back at the hotel, we went frog hunting at night in the ornamental landscaping. I think the staff thought we were nuts, but it was really neat to see tropical treefrogs in nearly natural habitat! We also had geckos stuck to all the walls in

the hotel. The same gecko usually was in the same place each night and carefully defended its territory against invaders. The only turtle we saw on the island was in a batik, but members of the St. Lucia Naturalists Society count sea turtle nests in season.

I found out one thing in graduate school. Most geologists hate snakes. It is a very valuable thing to have a grad student who is not afraid of snakes to remove said snakes from the area surrounding the professor who is afraid of snakes. I also found that residents of former Gondwanaland are more afraid of snakes than descendants of people from Laurasia. Perhaps it is because more Southern Hemisphere snakes are venomous? Field camp in Wisconsin was a blast. I found about 35 reptiles and amphibians and carefully noted each one in my field notebook while taking great care that my fellow students and my professor never saw any of the snakes. I got every species of snake in the county except rattlesnakes (which may be extirpated). What I didn't know was that I had to hand in the notebook! I'll give the prof. credit, though. He got a field guide and looked up all the Latin names (I can never remember the "common" names) and when he returned the book to me, there was a "post-it" that read "I am very glad I did not see all these snakes. Do you have pictures?"

My major professor was terribly afraid of snakes and he had a really naughty habit of playing practical jokes on students. So, for his birthday, I gave him a present. It was a critter cage, with newspaper, a water dish, a hide box, a branch and a rubber snake just peeking out of the hidebox. As soon as he pulled the paper off, he blanched! He went "Oh, oh, oh. There's a snake in there. What shall we do? I cannot keep this!" It was a full two minutes before he noticed that the snake didn't move much and a long time before he would even touch it! We thought it was hilarious. He was unamused. We never saw the snake again.

He and I went to New Orleans and I presented my graduate work to the Geological Society of America annual meeting. There were lots of herps in New Orleans. They sell freeze-dried "voodoo rattlesnakes" and preserved baby gator heads as well as gator skulls and skeletons. Worse was the ubiquitous shrimp that every chef in the city insisted on stuffing into every meal. My vegetarian herpetological friends Dez and David Crawford came to my rescue at this point—showing me that Cajun does not have to be cruel (or too hot!) to be good.

I came home from this trip to find that the excavator for the new building next door had caused severe damage to my house and had undercut our foundation. We spent that winter on one heated floor—the engineers didn't want the downstairs heated for fear we'd slip off our foundation into the hole! I gave away most of my turtles at this point because it was too cold to hibernate them downstairs and too cold to keep them active upstairs. My last baby went to John Archer—a CHS member who also took one of my classes at the Arboretum. I hear she is plump and happy and lives in a walk-about larger than my kitchen.

Looking back, I see that I have some very special turtles (and other herps) to thank for the wonderful way my life has turned out, for my education, my husband, my hundreds of correspondents and contributors, and my vocation.

Currently Happening Stuff

reported by Gary Kostka

Opportunities Abound . . .

A feeling of holiday cheer permeated the air at the Field Museum as members gathered for the December 30 general meeting of the Chicago Herpetological Society. President Steve Spitzer opened the business portion of the evening's proceedings with a number of announcements regarding upcoming events of interest to CHS members. First, he informed us that the Harold Washington Library is interested in having a CHS member do an hour-long presentation on snakes at the library on Saturday, March 14. Although Steve sounded as though he were prepared to take on this task himself, he invited any members interested in either assisting him or in taking his place to contact him for further details.

Next, Steve announced that the CHS will be participating in this year's Chicago Flower and Garden Show which will run March 14–22 at Navy Pier. Because of the show's extended schedule, students from Triton Junior College will be helping to man our exhibit during those periods when there are no CHS members available to do so. Once again, members interested in taking part in this event are encouraged to contact Steve.

Finally, Steve brought up the idea of resurrecting the CHS summer picnic, an event which hasn't taken place for the last couple of years, but which at one time had been a regular part of the Society's yearly activities. This sounds like a great opportunity for members to get together for a day of fun and relaxation, with a chance for us all to become better acquainted. What we need in order to pull this thing off is someone to step up and organize a picnic committee. They will need to select a forest preserve or state park at which to hold the event, and procure the permit necessary for securing the site on a suitable weekend date sometime between the months of June and September. Steve concluded by asking that anyone interested in chairing the picnic committee contact him in the not too distant future.

Hoosier Herps . . .

December's featured speaker was local/longtime CHS member David Beamer. David is a recent graduate of Indiana University where he received a Bachelor of Science degree in biology. He studied under noted herpetologist Dr. Spencer Cartwright at the University's Northwest Campus in Gary. David's presentation covered the herpetofauna of Newton and Lake Counties in Indiana. These two counties located in the extreme northwest corner of the state were the sites of separate field research projects undertaken by David in the course of his undergraduate work at I.U.N.

David's research in Newton County focused on establishing the differences in turtle assemblages within various wetland habitats. He began by explaining that most of the northern half

of Newton County consisted of wetlands until the late 1800s, when much of the area was drained and the land was converted to agricultural use. The region, formerly known as the Grand Kankakee Marsh, was at one time one of the world's largest inland marshes and was also the site of

Indiana's largest body of fresh water, Beaver Lake. By 1876 Beaver Lake had been reduced from 30,000 to 20,000 acres, and has since been drained completely. Further impacting the area was the straightening and channelization of the Kankakee River in order to facilitate navigation. The Kankakee forms the northern border of Newton County. All that remains of this once-great marsh habitat are a few fragmented wetland areas, permanently altered by man's construction of dikes and ditches in an effort to control flooding. It was in these few remnant wetland areas that David pursued his field studies.

Over the course of two years, David sampled the turtle populations in three separate wetland habitats which he described as seasonal marsh, dike marsh and lake fringe marsh. The results of his survey indicated that there were four species of turtles still inhabiting these wetland areas. The two most commonly encountered were the painted and common snapping turtles. Blanding's turtles and musk turtles were more scarce, with the musk turtle being restricted to the dike and lake fringe marshes which retain water throughout the year. Population assemblages in all three habitats were basically the same, which seemed contrary to what one would expect. David speculated that this was probably due to the homogenization of these habitats resulting from man's alterations throughout the area. Painted and common snapping turtles are fairing well in these altered wetland areas because they are generalists and thus are able to exploit these marginal habitats. The requirements of the musk and Blanding's turtles are more specific, thereby making it more difficult for them to find suitable habitat, the end result being a reduction in their numbers and ultimately in their chances for survival within these areas.

We were then shown a list of turtles recorded in Newton County prior to its settlement, at a time when the Kankakee River, Beaver Lake and the surrounding wetland areas were all still intact. The list was impressive indeed and included the four previously mentioned species as well as the spiny soft-shell, common map, red-eared slider, spotted and mud turtles. The current lack of most of these turtles in Newton County serves as a testament to the fact that man's re-engineering of the land to serve his own needs often has a devastating effect on a region's biodiversity.

David went on to discuss his second project which involved the inventorying and monitoring of the herpetofauna within a 700-acre parcel of land in Lake County Indiana known as the Oak Ridge Prairie. The project was brought about by the Lake

County government's desire to develop a portion of the site by creating picnic groves, and a park with a playground. They were also interested in managing some of the acreage as a nature preserve. Lake County representatives approached Dr. Cartwright at I.U.N. for assistance in determining what herps were represented at the site, and how their planned developments might affect them. It was through his association with Dr. Cartwright that David learned of this research opportunity at Oak Ridge Prairie, and volunteered for the project.

The site consisted primarily of lowland prairie, wet for the most part, but with some dry regions. One particularly low lying area had been dredged out to create an artificial wetland habitat designated as a waterfowl resting area. Portions of the site had been utilized for farming at one time, but were now in the process of being restored to their former prairie state.

David sampled the site's various habitats by setting up drift fences and pit traps in each. Herps moving through an area and encountering one of these fences would move laterally along the barrier, eventually falling into one of the traps located along the fence's base at regular intervals. Two fences were set up within each habitat, oriented perpendicularly so as to avoid any directional sampling bias. Wire mesh funnel traps were also employed for capturing snakes. Traps were checked daily, and the herps found within were documented, marked and released.

The results of David's research at Oak Ridge Prairie bore certain similarities to his findings in the Newton County turtle survey. Once again, it was the generalist species that were hanging on in a marginal habitat, while the species with more specialized needs were either struggling to survive or had vanished altogether. By far the most commonly encountered species at the site was the American toad, so common in fact that David could not mark all of the specimens that he captured. Found in lesser but still significant numbers were chorus frogs, spring peepers, northern leopard frogs, eastern garter snakes, brown snakes and red-bellied snakes. Sampling of the waterfowl resting area revealed only painted and snapping turtles. Fox snakes were encountered at the site but were extremely rare, probably because the predominately wet conditions in the area were unsuitable for egg-laying reptiles. The blue spotted and tiger salamander were also found at the site in limited numbers at only one or two of the areas which were sampled.

There was however one area located at a remote part of the site which was particularly noteworthy because of the species which it harbored. The area was approximately 10 acres in size, and a house had been located on the site at one time. The house had been removed, and the partially cleared site that remained mimicked the characteristics of a primary succession habitat. The site's upland orientation and lack of dense vegetation allowed for a number of species to exist there that were otherwise unknown in that region. Within this 10-acre micro-habitat David encountered the six-lined racerunner, the western slender glass lizard, the eastern hognose snake, the western ribbon snake and the smooth green snake. In this case, it seemed as if the hand of man might have had a positive affect on an area by unwittingly creating a suitable habitat for a number of species that might not have been able to exist there

otherwise.

Due in part to David's research, the Lake County government is leaning toward limiting their development at the Oak Ridge Prairie site. They will probably establish only a limited number of small picnic areas, and maintain the vast majority of the land as a nature preserve. Ironically, one of the factors influencing their decision had to do with an animal which David inadvertently caught in one of his funnel traps. Neither reptile or amphibian, the unlikely captive was a black rail, a marsh-dwelling bird that hadn't been seen in Indiana since 1976. In fact, the bird wasn't even on Indiana's endangered list because it was thought to have been completely extirpated within the state. What's more, the capture occurred in August, which is the black rail's breeding season. This would appear to be an indication that the species is attempting to re-establish itself within the state.

Future projects for David may include genetic studies on a group of unusual plethodontid salamanders that he discovered living in isolated ravines located in western Indiana. In fact, these *Plethodons* were found further west in the state than any previously recorded specimen. The salamanders look like neither the red-backed nor the lead-backed phase of the red-backed salamander, which is the species of *Plethodon* known to occur nearest the area. Genetic research is necessary in determining whether or not he may have located an undescribed species. He is also interested in doing his graduate research at a site in southern Indiana that he described as having the richest salamander diversity in the world. Eleven species of salamander are known to breed within this five-acre area, and the research possibilities appear to be unlimited. We hope he'll find the time to come back and share his experiences with us again.

There's No Business like Show Business . . .

Although no longer currently happening, this stuff does bear mentioning. In the past few months, members of the CHS and some of their animals have been doing guest spots on radio and television. Steve Dale, host of Pet Central, the informative and entertaining radio program which airs each Saturday afternoon on WGN radio, had Lori King-Nava and Gary Fogel as guests on his October 4 show. Steve makes a point of stressing education and proper husbandry techniques during his shows, and invited Lori and Gary to join him on the air for a half-hour discussion on herps as pets. They were also afforded the opportunity to field a number of herp-related questions from listeners.

Steve also does a weekly pet segment each Tuesday during WGN television's morning news program, which airs from 6:00 to 9:00 A.M. Pablo King-Nava (a green iguana) and several unnamed vittikins (bearded dragon × Rankin's dragon) have appeared with Steve in these live broadcasts. One can just imagine a multitude of viewers sitting in front of their TVs, learning about the pros and cons of green iguana ownership and the genetic history of the vitikin while enjoying their morning's repast. The CHS is keenly aware of the plight of the green iguana, and owes a debt of gratitude to Steve Dale for his efforts in informing the public of the potential problems associated with the acquisition of these animals.



Pet reporter Steve Dale greets Pablo the green iguana on the WGN-TV morning news.

It's Creeping up on You. 'Fest 98 Update...

The first meeting of the ReptileFest '98 Planning Committee was held on Friday, January 23, and the 'Fest snowball has begun to gather momentum. A tremendous amount of planning goes into this show and there's plenty of opportunity for any interested members to help out. No matter what abilities you may or may not possess, there are things you can do to contribute, but you'll need to contact show coordinator Lori King-Nava at (773) 477-3645 or Gary Fogel at (773) 935-6938 in order to find out just what those things are. I'd like to encourage anyone even remotely interested in helping out to contact either Lori or Gary and let them know. They'll be happy to find you a job that's suited to your talents and availability. Helping to put ReptileFest together can be just as rewarding as participating in the show itself.

By the time you read this, ReptileFest '98 will be a mere two months away. It's time to start considering what animals you might want to show, and how you might make their displays as interesting and aesthetically pleasing as possible. This is a great opportunity to show off your animals and your expertise to an appreciative audience. Our success in this endeavor depends upon the participation of as many individual members as possible, so please consider taking part in this year's 'Fest. I know you'll have a great time. Hope to see you there! Once again, the details are as follows:

What? ReptileFest '98

Where? Northeastern University's Alumni Hall
Chicago, Illinois

When? Saturday and Sunday, May 2-3,
10:00 A.M. - 6:00 P.M.

Doin' the Zoo in St. Lou . . .

Audrey Vanderlinden has taken the proverbial bull by the horns and organized a CHS field trip to the St. Louis Zoo on Sunday, June 14. Tickets for the trip will be available at a cost of \$45 per person. The ticket price includes round-trip transportation on a luxury motorcoach and admission to the zoo. While there, you'll have an opportunity to go behind the scenes with Jeff Ettling, Curator of Reptiles, and learn about the operations at the zoo's newly remodeled, state-of-the-art Herpetarium. The St. Louis Zoo has a fantastic collection of herps including rarities such as the Komodo dragon and tuatara. The motorcoach will depart from North Park Village Nature Center, 5801 N. Pulaski shortly after 5:30 A.M., and arrive in St. Louis at approximately 11:00 A.M. It will depart from the zoo 3:30 P.M., returning to North Park Village at approximately 9:00 P.M. Call Audrey Vanderlinden at (773) 836-2477 to make reservations for this fun-filled herpetological happening, or you can sign up at the general meetings. A limited number of seats are available, so be sure to purchase your tickets early.



Joan Moore introduces Pythagoras to Jessica Coia at the 1996 Chicago Academy of Sciences HerPETological Weekend.

In Memory of Pythagoras . . .

On behalf of the CHS, I'd like to extend condolences to Joan Moore on the loss of Pythagoras, her Burmese python which died recently after more than 20 years in Joan's care. Joan has been a valued member of the CHS for many years, and her contributions have played a large part in helping the Society attain the status and recognition that it has today. Pythagoras was a magnificent animal, approximately 17 feet in length and weighing in at close to 200 pounds. Pythagoras was a star attraction at numerous CHS exhibitions, and Joan was always happy to share her with the public. She was a grand ambassador for the CHS and will be greatly missed.

Thanks for your indulgence. See you next month.

Herpetology 1998

In this column the editorial staff presents short abstracts of herpetological articles we have found of interest. This is not an attempt to summarize all of the research papers being published; it is an attempt to increase the reader's awareness of what herpetologists have been doing and publishing. The editor assumes full responsibility for any errors or misleading statements.

TAXONOMY OF A NEOTROPICAL TREE BOA COMPLEX

R. W. Henderson [1997, Caribbean J. Science 33(3-4): 198-221] notes that the arboreal boa *Corallus hortulanus* has a wide geographic and ecological distribution on the Neotropical mainland and several continental and oceanic islands. He examined over 600 specimens of *C. hortulanus* from throughout its range utilizing characters of scalation, size, color, and pattern, coupled with analysis of mitochondrial DNA sequences from several critical areas, and determined that *C. hortulanus* is a complex of four species: *Corallus hortulanus* (Linnaeus) (the Guianas, throughout Amazonia, and into southeastern Brazil), *C. ruschenbergerii* (Cope) (southern Costa Rica, Panama and associated islands, northern Colombia, northern Venezuela including Isla Margarita, and Trinidad and Tobago), *C. cooki* Gray (St. Vincent), and *C. grenadensis* (Barbour) (Grenada Bank).

FEEDING BY AMPHIBIANS DURING METAMORPHOSIS

S. L. Kuzmin [1997, Amphibia-Reptilia 18(2):121-131] studied the feeding ecology of 28 amphibian species with complete life cycles from the last pre-metamorphic stages to metamorphosed juveniles. The widespread view that feeding ceases completely during metamorphosis was not confirmed. Generally, however, amphibian feeding rate decreases at metamorphosis. Foraging in Caudata either does not cease (Hynobiidae, rheophilous Salamandridae) or ceases only before the end of transformation, which takes less than one metamorphic stage. The cessation of foraging in Anura coincides with the transformation of the mouth and digestive tract at the beginning of the metamorphic climax. Foraging on small animals starts just after the change from a larval to a post-metamorphic mouth, i.e., before the end of metamorphosis.

A NEW GECKO FROM THE NICOBAR ISLANDS

I. Das [1997, J. Herpetology 31(3):375-382] describes *Cyrtodactylus adleri*, a new species of bent-toed gecko, based on seven examples from the island of Great Nicobar, India. Although reported as conspecific with *C. rubidus*, it can be differentiated from the Andamanese species in possessing dark spots (vs. dark bands) on the dorsum; 48-50 imbricate (vs. 38-42 juxtaposed) midventrals; six (vs. four) postnasals; two (vs. three) postcloacal tubercles; and presence of a preanal groove. In the lack of a preanal groove, imbricate ventrals, and dark spots on dorsum, the new species appears close to the poorly known Sumatran endemic, *C. lateralis*, from which it may be differentiated by its small body size (SVL 53.5-64.7 mm in four adult females, 61.8-68.5 mm in three adult males), dark spots on dorsum, and 48-50 midventrals. The species is named for Kraig Adler, in recognition of his contributions to herpetology.

EASTERN SPINY SOFTSHELL ECOLOGY

T. E. Graham and A. A. Graham [1997, Chel. Conserv. Biol. 2(3):363-369] captured 37 eastern spiny softshells, *Apalone spinifera spinifera*, near the mouth of the Lamoille River, Chittenden County, Vermont. Males ranged in carapace length (CL) from 111.2 to 174.1 mm, and in weight from 105 to 495 g; females ranged from 218.3 to 365.3 mm, and from 810 to 3750 g. A population size of 60 adults (95% confidence interval: 35-115) was estimated for the study area and the sex ratio was not significantly different from 1:1 (18 males:17 females). Movements were extensive in spring and late summer. Telemetered turtles left their wintering grounds about 3 km upriver from Lake Champlain in late April to descend to the lake for feeding and reproduction. They nested from 14 June to 12 July 1990 on sandy beaches mostly in the vicinity of the river's mouth at Lake Champlain. Clutch size ranged from 10 to 21 ($\bar{x} = 16.0 \pm 0.92$). Forty-eight hatchlings ranged in CL from 32.8 to 43.7 mm ($\bar{x} = 38.8 \pm 0.41$), and in weight from 4.53 to 9.17 g ($\bar{x} = 6.71 \pm 0.224$). After the nesting period adults moved into the river and by early September had traveled upstream to settle near their wintering grounds. In October they moved to their hibernaculum on a narrow segment of the river bottom.

TETRAPLOIDY IN AN ILLINOIS POPULATION OF SALAMANDERS

C. A. Phillips et al. [1997, J. Herpetology 31(4):530-535] note that almost all unisexual members of the *Ambystoma jeffersonianum* complex of salamanders are triploid, although occasional tetraploid individuals have been observed in a few populations. They report that a population characterized by a high percentage of tetraploids (7-27%) exists at Kickapoo State Park, Vermilion County, Illinois. This high frequency of tetraploids has been maintained over a period of 12 years. Tetraploids in this population were originally formed by fertilization of unreduced *A. platineum* ova by *A. texanum* sperm. Tetraploids at Kickapoo State Park are, however, capable of obtaining sperm from the sexual host, *Ambystoma texanum*, and producing tetraploid offspring. Because tetraploids can be produced two ways, they might be expected to out-reproduce and replace triploids. However, these tetraploids also produce abundant pentaploid offspring as a result of fertilization of their ova by *A. texanum* sperm. A high incidence of physical abnormalities among pentaploid larvae and their scarcity as breeding adults suggests that pentaploids have reduced viability. Production of pentaploid larvae may thus be the selective mechanism that prevents tetraploids from replacing triploids in this population. Higher than normal water temperature may be causing increased fertilization rates in this population; this would account for its higher frequency of tetraploids compared to other populations, as well as for the high number of pentaploid larvae that tetraploids produce.

STATUS OF THE ANACONDA *EUNECTES BARBOURI*

P. D. Strimple et al. [1997, J. Herpetology 31(4):607-609] note that four species are usually recognized in the boid snake genus *Eunectes*: *murinus* (Linnaeus), *notaeus* Cope, *barbouri* Dunn and Conant, and *deschauenseei* Dunn and Conant. The validity of *murinus* and *notaeus* has never been in doubt. *E. deschauenseei* is now considered to be a sister species to *E. notaeus*. But the status of *E. barbouri* is ambiguous. Based upon examination of preserved material, observation of anacondas in the field, and experience with captive-born litters of *E. murinus*, the authors have noted that the distinguishing characteristic of *E. barbouri* (dark dorsal spots with light centers) (1) is widespread in *E. murinus* populations, (2) is very subjective (relative darkness of dorsal spots occurs on a continuum), and (3) occurs in *E. murinus* litters that also have littermates with typical solid dorsal spots. Furthermore, selected meristic scale characters for specimens purported to be *E. barbouri* fall well within the range for *E. murinus*. The authors conclude that *Eunectes barbouri* should be placed in the synonymy of *E. murinus*.

SHELL INJURIES IN FLORIDA BOX TURTLES

C. K. Dodd, Jr., et al. [1997, Herpetological Natural History 5(1):66-72] report on the incidence of shell injuries and anomalies in a population of Florida box turtles, *Terrapene carolina bauri*, from Egmont Key, located at the entrance to Tampa Bay, Hillsborough County, Florida. The report is based on an examination of 1042 individuals from 1991 through 1995. Four categories of injuries to the carapace (fire scars, exposed bone, major structural damage, damage or abrasion to marginals) are recognized, and two to the plastron (round holes in the posterior portion of the plastron, other minor structural damage). The most common injury, affecting 17.7% of all turtles, involved trauma or abrasion to the marginals, perhaps due to intraspecific aggression. In addition to injuries, supernumerary scutes involving the vertebrae and marginals were found on 15 turtles. The authors suggest ways to reduce trauma resulting from anthropogenic causes through scheduling prescribed burns and lawn mowing/groundskeeping activities at times when turtles are minimally active.

BUFO VIRIDIS ADVERTISEMENT CALLS

C. Giacoma et al. [1997, Herpetologica 53(4):454-464] studied the calling behavior of three Italian populations of the green toad (*Bufo viridis*). An analysis of male advertisement calls revealed a significant influence of both body size and temperature on call properties. Large males uttered relatively low-pitched and long calls. Temperature affected temporal but not spectral parameters. Therefore, female phonotaxis experiments were focused on calls differing in fundamental frequency, which was the most constant parameter within males and a potentially reliable acoustic indicator of male size. In discrimination experiments, females preferred low-pitched calls. A skeletochronological analysis showed a significant relationship between early sexual maturity and large size, which may be an indicator of potential mate quality in anurans.

A FRUIT-EATING CORDYLID

M. J. Whiting and J. M. Greeff [1997, Copeia (4):811-818] note that *Platysaurus capensis* is an omnivorous lizard that feeds on Namaqua figs (*Ficus cordata*) when they are available. They studied fig-feeding behavior of male, female, and juvenile lizards at Augrabies Falls National Park, South Africa. Focal sampling and feeding trials were used to quantify fig handling and feeding behavior. Adult *P. capensis* usually ate the entire fig, but handling times were significantly shorter for males than females. Adults frequently used the rock substrate to break figs, whereas juveniles could only eat figs already broken (figs were often broken open by birds and other lizards). Juveniles usually ate only part of each fig, often just the seeds. Juveniles also used a head-shaking behavior rarely seen in adults, to break off manageable pieces of figs. *Platysaurus capensis* recognized figs away from fig trees, indicating a flexible recognition ability. During foraging in debris, lizards stayed close to exposed rock. Interference competition between lizards was strong, resulting in individuals running to areas free of other lizards to avoid harassment during feeding. Adults were more likely to approach feeding lizards than juveniles. Lizards also exhibited a strong sensory bias for moving objects, selecting moving unripe (inedible) figs over stationary ripe figs. Adult lizards chose large ripe figs over two classes of older, more desiccated figs; ripe figs were consumed disproportionately to their availability. Experiments using paint-manipulated ripe and unripe figs showed that, when size is controlled, lizards use color and/or brightness as an initial indicator of fig quality. Visual evaluation was often followed by tongue-flicking or nudging with the snout. This study represents the first detailed examination of feeding behavior in a cordylid lizard.

HERPETOFAUNA OF A GRANITIC MOUNTAIN

C. W. Myers and M. A. Donnelly [1997, American Museum Novitates 3213] report that Pico Tamacuari, the highest point (2340 m) in the Sierra Tapirapecó, dominates the skyline on the border between Brazil and Venezuela. It is a granitic dome that rises some 800 m above the wet montane forest below. This forest supports a depauperate herpetofauna reminiscent of a middle elevation forest fauna on a sandstone table mountain (tepui). Eleven species of amphibians and reptiles were collected during a six-day period in the dry season (March), at 1160-1460 m above sea level. Six new frog species are described from this sample: *Hyalinobatrachium crurifasciatum*, *Colostethus tamacuarensis*, *Stefania tamacuarina*, *Eleutherodactylus avius*, *E. cavernibardus*, and *E. memorans*. At least some of these have counterparts that are endemic to tepuis. Other species from the sample include a frog (*Hyla benitezi*) and two lizards (*Arthrosaura synaptolepis*, *Neusticurus racenisi*) endemic to the Pantepui Region, and a lizard (*Anolis chrysolepis*) and a snake (*Thamnodynastes pallidus*) widely distributed in Amazonia and Guayana. All five of these nonendemic Tamacuari species occur also on sandstone tepuis. It seems not to matter to such species whether the underlying rock is sandstone or granite. The herpetofauna of Pantepui resembles the avifauna in not being completely restricted to habitats on sandstones of the Roraima Formation.

AGE ESTIMATION OF TURTLES USING SCUTE LINES

R. J. Brooks et al. [1997, J. Herpetology 31(4):521-529] note that counts of lines on carapacial and plastral scutes are widely used to age turtles because the technique is convenient and non-destructive. However, the procedure has rarely been tested for accuracy or precision against known-aged turtles because verification of age is difficult in such long-lived animals. The authors tested the accuracy and precision of counts of scute lines using juvenile painted turtles (*Chrysemys picta*) of known age (1–7 yr), and juvenile and adult snapping turtles (*Chelydra serpentina*) whose ages were not known. Lines on plastral scutes of *C. picta* were counted from a marked population in the field, and underestimated known age as early as age 4 yr. The accuracy of these counts decreased with known age and by age 6 and 7 yr, only 11% of turtles were aged correctly. In *C. serpentina*, the authors used plaster casts and black-and-white photographs to make permanent records of the fourth vertebral scutes of a set of marked individuals. Counts were made by both naive and experienced observers from casts made between 1 and 10 yr apart and were compared with one another and with counts made from enlarged black-and-white photographs of the same individual. The authors tested whether counts of scute lines were affected by the age of the turtle, the experience of the observer, observer expectancy bias, and the method of recording data. They concluded that all these factors influenced both the accuracy and precision of counts, and that estimates became increasingly unreliable with age. They suggest that counts of scute lines must be tested carefully against known-aged turtles and conducted so as to eliminate expectancy bias. Even then, variability among and within observers and among methodologies may produce age estimates that are at best approximations and at worst misleading, except in the youngest specimens.

COURTSHIP BEHAVIOR IN SPRING SALAMANDERS

C. K. Beachy [1997, Herpetologica 53(3):289-296] describes for the first time courtship behavior in the spring salamander *Gyrinophilus porphyriticus*. This species is a member of the family Plethodontidae, and is generally acknowledged as exhibiting the largest number of primitive characters in the family. Like all plethodontids, it exhibits a tail-straddle walk that usually leads to spermatophore deposition. The early stages of courtship are characterized by extensive head-sliding (rubbing the snout over the nares, head and body of the female) by the male. Later, during the tail-straddle walk, the female often rubs her snout laterally over the base of the male's tail. During the period immediately preceding spermatophore deposition, the male undulates his tail beneath the female's chin. That males lack a mental gland (that secretes courtship pheromones) and yet perform extensive head sliding suggests that this behavior serves a tactile function in *G. porphyriticus*, rather than to administer courtship pheromones. Given the large number of primitive characters exhibited by *G. porphyriticus*, headsliding is viewed as a precursor to the behaviors used in pheromone-delivery seen in other plethodontids. The mental gland of other species may be secondarily derived and may have evolved subsequent to tactile stimulation.

ESTIMATING TURTLE AGE BY COUNTING ANNUAL GROWTH LAYERS IN CLAWS

R. B. Thomas et al. [1997, Copeia (4):842-845] investigated whether annual layers could be observed in sections of claws from *Trachemys scripta* and *Deirochelys reticularia* and whether counts based on such layering could provide reliable data for age estimation. Use of claws provides a number of advantages over other structures used for age estimation in turtles: for example, annuli within the claws may not be exposed to the degree of wear experienced by plastral scutes; claws are present in species lacking plastral scutes (e.g., softshell turtles); and claws allow for nondestructive sampling of turtle populations. Transverse claw sections from known-age *T. scripta* (n = 14) and *D. reticularia* (n = 8) ranging in age from 1 to 30 yr for *T. scripta* and 1–6 yr for *D. reticularia* were analyzed by one reader for age estimation. Age estimates from 27 turtles of unknown age (*T. scripta*, n = 11; *D. reticularia*, n = 16) made independently by each of three readers were compared. Age estimates based on claw sections were in general agreement with known ages. Nine of 19 estimates were in exact agreement with known ages. All ages estimated from claw sections were within one year of known ages except for one 4-year-old *T. scripta* estimated to be one year of age. Regression models of known age vs. claw-based estimates suggest a one-to-one correspondence between known and estimated age, which in turn suggests that annuli in claws can be used to estimate age accurately in younger individuals of *T. scripta* and *D. reticularia*. At least two of the three readers agreed on age estimates for all claws of unknown age. All readers agreed on 7 of 16 of the age estimates. All age estimates for a given individual were within one year of the other two estimates. The ability of three readers to count up to 14 distinct layers in claws of unknown age suggests that the upper limit of this technique may exceed that of techniques that rely on counts of plastral annuli. Further studies are needed to determine whether the claws from other species show growth layers, whether other techniques of sectioning or staining will reveal annuli better in claws from older turtles, and whether annuli are deposited in the claws throughout life.

GOPHER TORTOISE HOME RANGES

R. B. Smith et al. [1997, Chel. Conserv. Biol. 2(3):358-362] analyzed data from 10 male and four female radiotagged gopher tortoises (*Gopherus polyphemus*) on the Kennedy Space Center to determine home range sizes, the number of burrows used by each individual, and the preferential use of habitats within the home ranges. Home range size averaged 1.7 ha, which was larger than the average home range sizes reported for gopher tortoises elsewhere. Home ranges of males tended to be larger than those of females and males tended to use more burrows, but there was considerable overlap between sexes. The authors found no discriminating relationship between the habitats in the home range and home range size. Use of burrows within different habitats was proportional to the amounts of habitat, except that swales and open disturbed areas had few burrows. The use of individual burrows by several tortoises at different times and occupation of individual burrows by two tortoises at the same time were documented.

Unofficial Minutes of the CHS Board Meeting, January 16, 1998

The meeting was called to order at 7:40 P.M. Board members Ron Humbert, Jenny Picciola and Jenny Vollman were absent.

Officers' Reports

The minutes of the December Board of Directors meeting were read, corrected and accepted.

The Treasurer's end-of-the-year report was reviewed and accepted. Gary Fogel reported that all CHS funds that had formerly been held in comparatively low-interest CDs have now been transferred to a money market account.

Membership secretary John Driscoll reported current membership at 1096.

President Steve Spitzer passed out a schedule of board meeting dates for 1998.

Vice-president Jack Schoenfelder updated the board on upcoming speakers. Jack asked for some feedback on how to better manage the 1998 speaker roster.

Committee Reports

Shows: Show coordinator Jenny Vollman was not present to report. Steve Spitzer announced that the committee for the Flower and Garden Show, March 14-22, at Navy Pier will consist of himself, Ron Humbert and Ilene Sievert. The CHS will design a rainforest-type habitat in a 55-gallon tank to house some amphibians. Also a desert habitat may be set up. Steve also asked if anyone would consider giving a snake talk at the Harold Washington Library on March 14. Interested parties should contact Steve ASAP.

ReptileFest 1998: Lori King-Nava announced that the first committee meeting would be held Friday, January 23, at Mike Dloogatch's downtown office. She briefed the board on a few details and ideas in the works.

Old Business

Grants: With the approval of the board, Steve Spitzer appointed John Driscoll as chair of the 1998 Grants Committee.

St. Louis Zoo Trip: Event coordinator Audrey Vanderlinden announced that the trip will take place on Sunday, June 14, 1998. A notice will appear in the next CHS *Bulletin* and Audrey will announce the details at all upcoming general meetings.

CHS Summer Picnic: Audrey will also be working on a date and location for our resurrected annual picnic, to take place in late July or early August. It will be on the north side this year. Plenty of volunteers will be needed. See Audrey.

New Business

Jack Schoenfelder mentioned that *Bulletin* boxes are selling well, and informed the board as to the results of his inquiries into producing another batch of CHS decals. Jack, and Gino Martinez as well, will continue to look into decal prices.

Round Table

John Driscoll asked if there were any plans to resume our spring "Salamander Safaris," or initiate some other form of group herping activities.

Jack Schoenfelder passed out photocopies of recent articles from two northwest Indiana newspapers. The articles dealt with an emergency rule issued by the Indiana Department of Natural Resources on November 11, 1997, and effective December 3, 1997. The rule bans the purchase, sale, barter or trade (*not* possession) of all reptiles and amphibians native to Indiana, and similarly bans commerce in certain other herps that are deemed to be dangerous, such as venomous snakes, pythons over 10 feet long, and large crocodilians. A permanent rule with similar provisions has been proposed by the DNR. One of the articles mentioned the Northwest Indiana Herpetological Society, a group that was news to Jack. He plans to attend their next meeting.

The meeting adjourned at 9:30 P.M.

*Respectfully submitted for Recording Secretary Jenny Picciola
by Audrey A. Vanderlinden*

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**Chicago Herpetological Society
Statement of Income and Expense**

	1997		1996	
	INCOME	EXPENSE	INCOME	EXPENSE
Membership	19,477.56	2,588.77	28,743.30	1,587.03
Telephone		478.03	10.81	523.11
Miscellaneous Postage		128.72		115.20
Monthly Programs	299.00	977.54		2,272.40
Supplies and Equipment		48.79		236.17
Books and Merchandise	5,744.92	4,281.10	25,498.49	23,040.04
Bulletin: Printing & Postage Back Issues Advertising	 48.00 1,435.00	21,543.38	 37.50 1,844.50	21,789.34
Raffle	958.25		954.50	29.02
General Meetings		1,920.00		2,880.00
CHS ReptileFest	8,253.62	9,420.62	8,662.35	8,135.63
CHS Captive-bred Sale			3,045.00	2,538.65
Workshops			45.00	
Shows	1,440.00	1,073.95	1,110.00	1,076.82
Grants		2,000.00	500.00	3,000.00
Donations	525.00	200.00	90.00	192.94
Refreshments	40.00		47.00	
Library				351.15
Miscellaneous		1,301.93		626.86
Interest	2,072.91		740.74	
Returned Checks				22.00
Insurance		876.00		826.00
Awards		125.00		250.00
Sale of Book Inventory	16,000.00			
	56,294.26	46,963.83	71,329.19	69,492.36

Cash as of 31 December 1996	\$42,110.43
1997 Income – 1997 Expense	9,330.43
Illinois sales tax collected in 1997	427.81
Illinois sales tax paid to state in 1997	(609.00)
Cash as of 31 December 1997	\$51,259.67

Advertisements

American Federation of Herpetoculturists: A nonprofit national membership organization of herpetoculturists, veterinarians, academicians and zoo personnel involved in the captive husbandry and propagation of amphibians and reptiles. Membership includes highly acclaimed magazine, *The Vivarium*, dedicated to dissemination of information on herpetocultural accomplishments, herp medicine, breeding and maintenance, field studies and adventures, enclosure design and much more. AFH membership is \$26. Send information requests to: AFH-News, P.O. Box 300067, Escondido CA 92030-0067.

For sale: *Bulletin* boxes, \$10 each. Library quality with “Chicago Herpetological Society” imprinted. Each container holds about two years’ worth of *Bulletins*. Send check or money order to Chicago Herpetological Society, 2060 N. Clark Street, Chicago IL 60614. Allow four weeks for delivery.

For sale: rats and mice—pinkies, fuzzies and adults. Quantity discounts. Please send a SASE for pricelist or call Bill Brant, *THE GOURMET RODENT*, 6115 SW 137th Avenue, Archer FL 32618, (352) 495-9024, E-mail <GrmtRodent@aol.com>.

For sale: murine-pathogen-free rats and mice available in all sizes, live or frozen: pinkies, fuzzies, crawlers, small, medium and large. Frozen crawler mice in lots of 2000, \$.17 each. Also available, full grown hairless mice. FOB shipping point. Master Card accepted. Call (518) 537-2000 between 8:00 A.M. and 5:00 P.M. or write SAS Corporation, 273 Hover Avenue, Germantown NY 12526 for prices and additional information.

For sale: high quality feeder mice. Shipped UPS Next Day Air. All mice are properly processed to insure a quality product. Fourth year of production and supply of frozen feeder mice. Prices: pinks, \$25/100; fuzzies, \$30/100; weanlings, \$35/100. Also available are 4 oz. + rats, \$100/100. Quantity discounts available. The Mouse Factory, P.O. Box 85, Alpine TX 79831, (915) 837-7100, Ray Queen.

For sale: from Bayou Rodents, excellent quality feeder mice and rats. Every size available. Pinks starting at \$20/100. Orders are shipped by overnight service Monday thru Thursday. We accept Visa, MasterCard and Discover. For more info, contact Rhonda or Peggy, (800) 722-6102.

For sale: **high quality frozen feeders**. Over a decade of production and supply. Seven sizes of mice available: small newborn pinks up to jumbo adults. Prices start at \$25 per 100. Feeders are separate in the resealable bag, not frozen together. Low shipping rates. Free price list. Kelly Haller, 4236 SE 25th Street, Topeka KS 66605, (913) 234-3358 evenings and weekends.

For sale: In stock, Flex-watt and Ultra-therm heating products. **Frozen rodents** always available. Mice: pinks–crawlers, 3/\$1; weanlings, 40¢; subadult, 50¢; adults, 65¢; large adults, 75¢. Rats: small, 85¢–\$1; medium, \$1.25–2.00; large, \$2.25–2.75; jumbo, 3/\$10. Call on quantity discounts [note: discount on orders picked up at CHS meetings]. Live rodents available at higher prices. **Available now:** newsletter/catalog—many unique/hard-to-find herp husbandry items. Send business-size SASE for catalog, or call. Scott J. Michaels, D.V.M, Serpent City, P.O. Box 657, Island Lake IL 60042, (815) 363-0290.

For sale: Herp bags—colors vary, translucent ripcord nylon, super lightweight, extremely durable construction with hot corners sewn in, double seamed. Custom sizes made upon request. Sizes: 46" × 14", \$7 each; 24" × 12", \$6 each; 24" × 6", \$5 each. Shipping fees, \$1 for first bag, \$.30 each additional bag. Nicole Lechowicz, 290 Warren Road, #69, Carbondale IL 62901, (618) 457-2783.

For sale: *The Complete Index to the Proceedings of the Annual Reptile Symposium on Captive Propagation and Husbandry / International Herpetological Symposium, Volume 1, 1976, to Volume 16, 1992*. A categorized listing of all papers contained in the 16 volumes (over 300 entries). Thermal perfect bound, 26 pages. Extremely useful for symposium proceedings owners or anyone interested in learning about important, specific captive care and breeding articles. Also includes a looseleaf Volume 16 table of contents, which did not appear in this unedited volume. \$7.00 each (postpaid). Dave Fogel, The Herp House, 1750 Haines Road, Orwell OH 44076, (440) 685-4615 phone, (440) 685-4572 fax.

For sale: **STAR** tortoises, c.b. 6" mainland female, c.b. 5½" Sri Lankan male (wider lines, lighter skin). Will sell for best acceptable offer. (847) 918-1118.

For sale: two Burmese brown tortoises, 6–7", captive born and raised, sex unknown, \$300 each or \$500 for both. Also, c.b. African spurred tortoises, \$50 each. Will trade for other tortoises. Looking for Egyptian Greeks that were imported several years ago. I need males and also will buy hatchlings from this species. Please help. Bob, (520) 868-4659. [AZ]

For sale: long-term captive tortoises and turtles. Also beautiful, healthy female boa, lizards, cages and accessories. (708) 389-0058.

For sale: leopard geckos, adult proven breeders, \$40 each or quantity discount for entire colony. Also, 1997 c.b. hatchlings, \$20 each. Quantity discount will apply. Ron Winfrey, (616) 363-9276. [MI]

For sale: one pair of smooth knob-tailed geckos (*Nephurus l. laevis*), c.b. 8/97, beautiful, ready to breed next July, \$1950/pair; one male and two female Crawl Cay boas, c.b. '94, rare dwarf boa constrictors, adults at 3½–4', ready to breed, \$3500/trio; one male “granite” spotted python and two hetero (for granite) females, proven breeders, \$750/trio; two female spotted pythons, hetero for granite, c.b. '97, \$100 each; one pair of Cape York spotted pythons, c.b. '96, plus one female Cape York, c.b. '94, all very nice, \$375/trio; one female rough-scaled sand boa, c.b. '95, \$125. (619) 265-7557 phone/fax. E-mail: <jaxzoo@cts.com>.

For sale: two savannah monitors. One subadult male, and one adult that I believe to be female. The male is a little hissy but won't bite, and the female is absolutely dog tame. The male has also been hibernated and is showing breeding behavior. He is priced at \$50; dewormed and very healthy! She is also \$50 but has a scar on her back from a burn. Mike, (630) 717-9955

For sale: **Northern blue-tongue skink babies!** Born 7/97, these youngsters are feeding very well and are from several different bloodlines, \$50 each (that is not a misprint!). Also: two 6-foot proven breeder male **Colombian boas**, beautiful, even-tempered and absolutely mite-free and healthy, \$225 each; adult **Mexican milksnake**, great eater. \$50. Located between Milwaukee and Chicago. Ask for Jim, (414) 654-6303.

For sale: 3-year-old savannah monitor with large custom enclosure, \$400. Iggy, (773) 736-4345.

For sale: adult male black ratsnake, \$40; adult male amelanistic bullsnae, \$100; one male and one female adult amelanistic corn snakes, \$100/pair; one male and one female adult corn snakes, hetero for amelanism, \$80/pair; one male and two female adult Colombian rainbow boas, \$300/trio; one male and two female adult Brazilian rainbow boas, \$750/trio; one male and two female adult Hogg Island boas, \$900/trio; all are proven breeders. Also, one male and two female c.b. '96 bullsnaes, male amelanistic, females are unrelated “high yellow” hets, \$200/trio; one male and three female c.b. '95 Argentine rainbow boas, \$600/group; two female c.b. '96 Dumeril's boas, \$600 for both; nine giant day geckos, \$20 each. Mark Wendling, (319) 857-4787. [IA]

For sale: by June, the following hatchlings. Northern pine snakes (*Pituophis m. melanoleucus*), north Jersey, \$120/pair, Alabama/New Jersey, \$90/pair; bullsnaes (*P. m. sayi*), Kankakee IL, \$35/pair, yellowheaded, \$50/pair, Canadian, \$60/pair; corn snakes (*Elaphe g. guttata*), large, handsome Delaware stock, \$35/pair; yellow rat snakes (*E. obsoleta quadrivittata*), lemon yellow, \$25/pair; dusty hognoses (*Heterodon nasicus gloydi*), \$100/pair; plains hognoses (*H. n. nasicus*), yellow phase, \$80/pair, russet phase, \$100/pair, “*viridis*” phase (look like prairie rattlers), \$125/pair [permit needed in IL for any *H. nasicus*]. Future projects include Nevada Cal. kings, Oregon Cal. kings, eastern fox snakes and dwarf western fox snakes. Deposits now being accepted. Bart Bruno, (203) 773-9257. NOTE: Proof or permit required where needed.

Advertisements (cont'd)

For sale: white oak rat snakes; trinket rats; blue beauty rats; coastal carpet pythons; pure jungle carpet pythons; Amazon tree boas; Cuban boas; frilled dragons 9/97. Jim Kavney, Hiss 'n' Things, Inc., (305) 664-2881. <www.hiss-n-things.com>. E-mail: <hissn1@aol.com>

For sale: beautiful, tricolor kingsnakes. Send SASE for **free** list. Also, free phone consultation on snake husbandry problems as a service to the herp community. Robert Applegate, P.O. Box 338, Campo CA 91906, (619) 478-5123. Thank you for your attention.

For sale: San Felipe rosy boa (*Lichanura trivirgata* "myriolepis"), male c.b. '95, light grey with clean orange stripes, \$140; leopard gecko c.b. '97, \$20; northern blue-tongue skink, c.b. '95, nicely patterned, robust, \$150. Chicago pick-up only. Mark, (773) 693-1030 or e-mail: <Markajg@aol.com>.

For sale: Brazilian rainbow boas, born 11/21/97, well started babies with pink, purple and orange highlights, \$175. Steph Porter, (612) 690-2589. [MN]

For sale: Brazilian rainbow boas — 2-year-old, 3' female, tame, healthy and a great eater, \$250 — 7-month-old female, \$175; lavender phase Cal. king, \$50. Mark, Strictly Serpents, (847) 854-3259.

For sale: one male and one female c.b. '96 jungle carpet pythons, Clark stock, exceptional colors, \$500/pair; Brazilian rainbow boas, c.b. '94, 6' +, male is rich orange color, female is orange-brown, nice crescents, very tame, \$500. (708) 361-5835 evenings.

For sale: five male and four female green tree pythons (4.3 adults, 1.1 two-year-olds; half from Bessette and half from Doug Price stock), beautiful, \$7250/group; three male and three female *Sanzinia madagascariensis*, 4-year-olds, two color phases with the original zoo paperwork, \$12000/group; three male and nine female diamond pythons, 7 months old and growing fast, \$4950/trio or \$1800 per single female. Jeff Jordan, (425) 255-5624 or (206) 559-1702. [Kirkland WA]

For sale: 6' female boa constrictor, proven breeder, \$100. Jack Phillips, (847) 724-4552.

For sale: **Premium captive-produced reptiles. Piebald black pines**; Brazilian rainbow boas (Lamar); blonde trans-Pecos rat snakes; Baja rat snakes; gray-banded kingsnakes (Langtry); Okeetee corns; melanistic garters (double hets); Peruvian matamatas; Mexican redleg tarantulas. Also, feeder mice and rats, husbandry items, bedding, etc. Mike Stefani, (630) 372-3936.

For sale: Send SASE to CRC, P.O. Box 0731, Las Vegas NV 89125-0731 for brochures and list of species available. Limited bookings available for guided tours of herpetological collection sites in Nevada. Call/fax (702) 471-0240. E-mail <fpglwmau@anv.net>.

For sale or trade: one male and one female c.b. '97 hetero Sonoran gopher snakes, male has tail kink, \$25/pair; one male and one female c.b. '96 Macklot's pythons, 5', \$150/pair. Will trade above for other captive born reptiles. Craig Roehm, P.O. Box 10834, Erie PA 16514, (814) 455-5246 (no answering machine so keep trying).

Free to good home: 4½' albino Burmese python; 5' common boa constrictor. (630) 443-6126.

Free to good home: 7' female Colombian redbellied boa. Christy, (708) 388-9150.

Free to good home: One relatively large adult savannah monitor, appears to be a female. She (I think) is dog tame and would make a great pet. Call Mike at (630) 717-9955 for more information.

Tours: Adventure tours to Madagascar! Join **Bill Love** seeing and photographing fauna and flora, heavily herp-biased, across the world's least known mini-continent. Maximum fun & photo ops assured on every trip. Contact him at: BLUE CHAMELEON VENTURES, P.O. Box 643, Alva FL 33920. TEL: (941) 728-2390, FAX: (941) 728-3276, E-MAIL: <blove@cyberstreet.com>.

Tours: **Road-riding in Costa Rica!** Treat yourself to the trip of a lifetime! Learn about tropical herps, find them, photograph them, see where they live. **Greentracks, Inc.**, offers the best herpetological tours led by internationally acclaimed herpetologists and herpetoculturists. See the Amazon, visit cloud forests, experience the world's greatest rainforest, super sunsets and good company. Call (800) 9-MONKEY.

Wanted: Adult Mali uromastyx (*Uromastyx maliensis*), females preferred. If you have any that are of breeding age, I will consider buying them. Mike, (630) 717-9955 (4:00 – 10:00 P.M.).

Wanted: adult female red-sided garter snakes. Scott, (919) 934-0110. [NC]

Wanted: big-headed turtles; mata mata turtles; Mexican giant mud turtles (*Staurotypus triporcatus*); exceptionally large common snappers (45 lbs. & up); large alligator snappers (over 90 lbs.); spectacled caiman from Trinidad, Tobago and Surinam; dwarf caiman; smooth-fronted caiman; albino turtles (except red-eared sliders). Walt Loose, (610) 926-6028, 9:00 A.M. – 1:00 P.M. or after 11:30 P.M. Eastern Time.

Wanted: Styrofoam boxes, any size or shape so long as they're not flimsy, preferably with cardboard liners, willing to pay from \$2 to \$5. Bring to CHS meetings. Scott J. Michaels, D.V.M., Serpent City, (815) 363-0290.

Line ads in this publication are run free for CHS members — \$2 per line for nonmembers. Any ad may be refused at the discretion of the Editor. Submit ads to: Michael Dloogatch, 6048 N. Lawndale Avenue, Chicago IL 60659, (773) 588-0728 evening telephone, (312) 782-2868 fax, E-mail <MADadder0@aol.com>.

News and Announcements

1998 CHS HERPETOLOGICAL GRANTS PROGRAM

The Chicago Herpetological Society announces the 1998 CHS Herpetological Grants Program to award financial support for herpetological research, education and conservation. Several awards of up to \$500 each will be available. Interested parties may apply for a grant in any one of the following categories:

1. Illinois Herpetology
2. Graduate Student Research in Herpetology
3. Undergraduate Research in Herpetology
4. Field Studies in Herpetology
5. Conservation
6. Captive Management, Husbandry, and Propagation

An attempt will be made to award grants in each category, but depending on the application received, not all categories may receive awards. Some categories may receive more than one award. The Grants Committee reserves the right to reassign the category under which a given proposal is submitted.

Applicants must be members of the Chicago Herpetological Society. In accepting a grant, the recipient agrees to abide by all state and federal laws, to submit a written summary of the project for publication in the CHS *Bulletin*, and to acknowledge the Chicago Herpetological Society in any publications that result from the subsidized research. Recipients are encouraged to submit their work as an article for the CHS *Bulletin*, or to present a program at a CHS general meeting.

Applications should include the following:

1. Statement of the objectives of the proposal.
2. Description of materials and methods.
3. Complete budget, not to exceed \$500.
4. Brief resumé of the applicant, if an individual. If the applicant is an organization, background information on that organization should be included.
5. A completion date for the project.

Applications must be typed, double spaced, and submitted in duplicate. Applications should be kept brief and simple, and proposals longer than three to five pages are discouraged. All applications must be received by 1 April 1998, and awards will be announced by 1 May 1998.

It is the goal of the Grants Committee to award grants to a variety of applicants; enthusiastic amateurs will receive equal consideration with professional herpetologists and graduate students. Topics which might translate into quality CHS *Bulletin* articles or monthly meeting programs are favored, though not requisite.

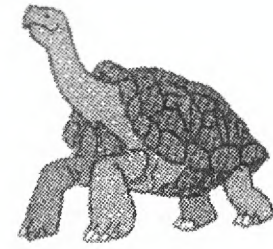
Submit applications to: Chicago Herpetological Society, Grants Program, 2060 N. Clark Street, Chicago IL 60614. Questions should be directed to John Driscoll, 57 Braemar Drive, Elk Grove Village IL 60007, (847) 439-7226.

MOVING??

Please let us know in plenty of time of any change in your mailing address. The *Bulletin of the Chicago Herpetological Society* is sent to our U.S. members by bulk-rate third class mail. This means that the U.S. Post Office will not forward your *Bulletin* with the rest of your mail. This is so even if you make a special request that your magazines be forwarded (such a request only applies to second class mail).



News and Announcements (cont'd)



ST. LOUIS ZOO FIELD TRIP

Hey, Herpnuts! It's time to have some fun! Time for another zoological excursion. This year the CHS is going to visit the St. Louis Zoo, with its newly remodeled, state-of-the-art Herpetarium. See the Komodo dragon and the (rarely seen by the public) tuataras. We will go behind the scenes with Jeff Ettling, Curator of Reptiles, and see lots of fantastic herps. Jeff informs us that there has been a lot of new breeding at the zoo, some of which are first-time successes in North America. Learn about the daily workings at the Herpetarium as well as the rest of this unique zoo. *Don't miss this fun field trip.* Enjoy the camaraderie and make new friends!

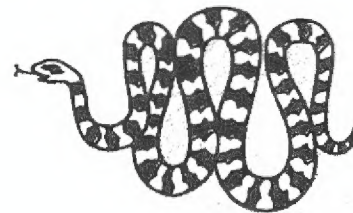
WHERE: The St. Louis Zoo, St. Louis, Missouri

WHEN: Sunday, June 14, 1998

TICKETS: \$45 per person, includes round-trip fare on an air-conditioned luxury motorcoach complete with restroom and VCR, and admission to the zoo. Tickets will be on sale at all upcoming general meetings. Registration is limited to the first 47 prepaying individuals, so purchase your tickets early.

We will meet at the North Park Village Nature Center, 5801 N. Pulaski, in Chicago, at 5:30 A.M., and leave shortly thereafter. We will arrive in St. Louis approximately 11:00 A.M. The bus will depart the zoo at about 3:30 P.M. and arrive back at North Park Village around 9:00 P.M. We suggest you bring snacks for the trip and if you'd like, a picnic lunch. Or you can purchase lunch etc. at the zoo.

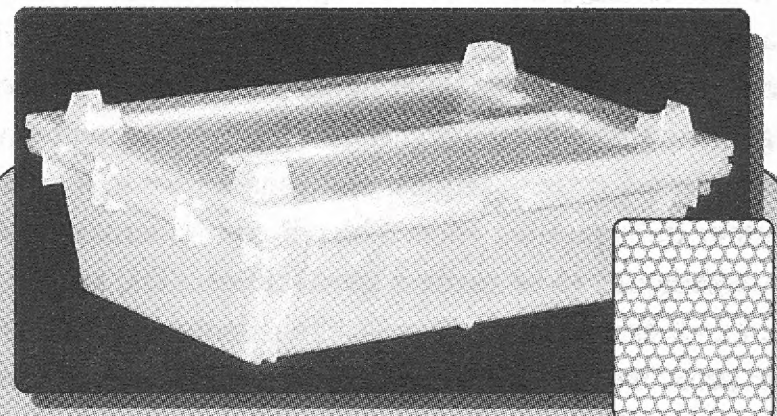
For further information and reservations call:
Event Coordinator Audrey Vanderlinden, (773) 836-2477.



Health Food for your herps!



Highest quality rodents are available in all sizes from pink mice to jumbo rats. Fresh frozen crawler mice are only 17¢ each in lots of 2,000. All frozen animals are shipped in insulated boxes.



Nearly 9,000 holes and they still can't escape!

The new TTC is ideal for transporting, breeding and storing your mice, rats, snakes and lizards. The strong plastic TTC has over 2,200 holes on each side and over 4,500 holes on the lid to provide maximum air circulation even when stacked. Each TTC can be divided into 2, 3 or 4 compartments and its smooth plastic construction makes washing a snap.

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UPCOMING MEETINGS

The next meeting of the Chicago Herpetological Society will be held at 7:30 P.M., Wednesday, February 25, at the Field Museum of Natural History, Roosevelt Road at Lake Shore Drive, in Chicago. The program this month will feature **Gerry Salmon**, a herpetoculturist from Rhinebeck, New York, speaking on "A Visit to a Rattlesnake Den, with an Overview of Timber Rattlesnakes in New England."

On March 25, **Randall Gray**, a herpetoculturist from Weatherford, Texas, will speak on the husbandry and breeding of lizards of the genus *Uromastyx*.

We are required to use the entrance on the west side of the museum. **We are allowed to use the free parking lot to the west of the museum as long as space is available. Your best bet is to try that lot first before settling for the lot to the east of the museum or for the Soldier Field lot. For the latest on the parking situation call our CHS message line, (773) 281-1800, before you come.** Public transportation is an option: the Roosevelt Road (12th Street) bus now goes directly to the museum, thus providing a connection with the el and subway. This bus service runs until 11 P.M.

Turtle Club

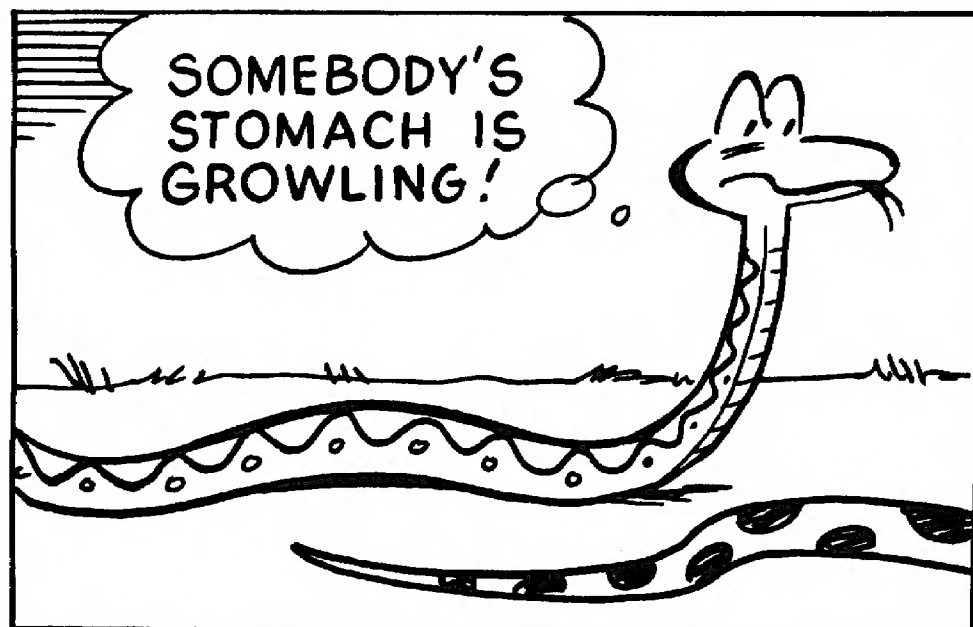
The Chicago Turtle Club will meet Sunday, February 22, 1:00–3:30 P.M., at the North Park Village Administration Building, 5801 N. Pulaski, in Chicago.

FLOWER AND GARDEN SHOW VOLUNTEERS NEEDED

The Chicago Herpetological Society has been asked to participate in the 1998 Chicago Flower and Garden Show, March 9–22 at Navy Pier. The Society will have an exhibit in the garden area of the show. Several other nonprofit groups will also have exhibits in the garden area. In addition to our exhibit, the CHS will share a booth with these other exhibiting societies. The booth can be used to give out information on upcoming events and general club information.

If you wish to help out your Herpetological Society, and if you like big shows, please call me up and volunteer to work at this show. The show runs from 9:00 A.M. until 8:00 P.M. each day. Duties will be either to keep an eye on the exhibit in the garden and answer questions, or to staff the information booth. No matter where you work during the show our goal is to educate the public, make people aware of our Society and the benefits of membership, and to recommend that interested persons attend this year's ReptileFest. Horticulture students from Triton College will also be helping out in the garden area. My goal is to encourage enough people to volunteer so that those who do have time to see the show. If you are interested, call me at home; leave a message if I am not there. Steve Spitzer, (773) 262-1847.

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